

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application  
Assistant Commissioner for Patents  
Washington, D.C. 20231

## NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of

Inventor(s): Seppo Alanara, Pekka Isomursu, Juhani Miettunen, Mikko Lietsalmi, Kalevi Kaartinen, Peter Decker, Arto Lehtonen, Pete Pihko, Teemu Tarnanen, Hannu H. Kari, Jari Maenpaa, Petri Nykanen, Mikko Terho, Patrik Gustafsson (originally named inventors)

WARNING: 37 C.F.R. § 1.41(a)(1) points out:

"(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(i) is filed supplying or changing the name or names of the inventor or inventors."

For (title):

A Communication Network Terminal Supporting  
A Plurality Of Applications

## CERTIFICATION UNDER 37 C.F.R. 1.10\*

(Express Mail label number is mandatory.)

(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date 10/30/98 in an envelope as "Express Mail Post Office to Addressee," mailing Label Number EL 067 100 116 US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Debi Conrad

(type or print name of person mailing paper)

*Debi Conrad*

Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

WARNING: Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

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10/30/98  
JC558 U.S. PTO

09183343 103098

JC540 U.S. PTO  
09/183343

10/30/98

## 1. Type of Application

This new application is for a(n)

(check one applicable item below)

- ☐ Original (nonprovisional)
- ☐ Design
- ☐ Plant

**WARNING:** Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

**WARNING:** Do not use this transmittal for the filing of a provisional application.

**NOTE:** If one of the following 3 items apply, then complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED** and a **NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION**.

- ☐ Divisional.
- ☒ Continuation.
- ☐ Continuation-in-part (C-I-P).

## 2. Benefit of Prior U.S. Application(s) (35 U.S.C. 119(e), 120, or 121)

**NOTE:** A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. 112. Each prior application must also be:

(i) An international application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or

(ii) Complete as set forth in § 1.51(b); or

(iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or

(iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(f) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

**NOTE:** If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED**.

**WARNING:** If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. 120, 121 or 365(c). (35 U.S.C. 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

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**WARNING:** When the last day of pendency of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, any nonprovisional application claiming benefit of the provisional application must be filed prior to the Saturday, Sunday, or Federal holiday within the District of Columbia. See 37 C.F.R. § 1.78(a)(3).

- ☒ The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

**3. Papers Enclosed**

- A. Required for filing date under 37 C.F.R. § 1.53(b) (Regular) or 37 C.F.R. § 1.153 (Design) Application

33 Pages of specification

2 Pages of claims

8 Sheets of drawing

**WARNING:** DO NOT submit original drawings. A high quality copy of the drawings should be supplied when filing a patent application. The drawings that are submitted to the Office must be on strong, white, smooth, and non-shiny paper and meet the standards according to § 1.84. If corrections to the drawings are necessary, they should be made to the original drawing and a high-quality copy of the corrected original drawing then submitted to the Office. Only one copy is required or desired. For comments on proposed then-new 37 CFR 1.84, see Notice of March 9, 1988 (1990 O.G. 57-62).

**NOTE:** "Identifying indicia, if provided, should include the application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawing a minimum distance of 1.5 cm. (5/8 inch) down from the top of the page . . ." 37 C.F.R. 1.84(c).

(complete the following, if applicable)

- ☐ The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. 1.84(b).
- ☐ formal
- ☐ informal

**B. Other Papers Enclosed**

85 Pages of declaration and power of attorney

1 Pages of abstract

2 Other Appendix

**4. Additional papers enclosed**

- ☐ Amendment to claims
- ☐ Cancel in this applications claims \_\_\_\_\_ before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
- ☐ Add the claims shown on the attached amendment. (Claims added have been numbered consecutively following the highest numbered original claims.)
- ☒ Preliminary Amendment
- ☒ Information Disclosure Statement (37 C.F.R. 1.98)
- ☒ Form PTO-1449 (PTO/SB/08A and 08B)
- ☐ Citations

- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- ☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- ☐ Special Comments
- ☐ Other

**5. Declaration or oath (including power of attorney)**

*NOTE: A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)-(3).*

*NOTE: A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)-(4).*

- ☒ Enclosed (copy)

Executed by

(check all applicable boxes)

- ☒ inventor(s).
- ☐ legal representative of inventor(s).  
37 CFR 1.42 or 1.43.
- ☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.
- ☐ This is the petition required by 37 CFR 1.47 and the statement required by 37 CFR 1.47 is also attached. See item 13 below for fee.

- ☐ Not Enclosed.

*NOTE: Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.*

- ☐ Application is made by a person authorized under 37 C.F.R. 1.41(c) on behalf of all the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 CFR 1.16(e) can be filed subsequently).

- ☐ Showing that the filing is authorized.  
(not required unless called into question. 37 CFR 1.41(d))

## 6. Inventorship Statement

**WARNING:** If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

☐ The same.

or

☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,

☐ is submitted.

☐ will be submitted.

## 7. Language

**NOTE:** An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of \$130.00 required by 37 CFR 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 CFR 1.52(d).

☐ English

☐ Non-English

☐ The attached translation includes a statement that the translation is accurate. 37 C.F.R. 1.52(d).

## 8. Assignment

☒ An assignment of the invention to Nokia Mobile Phones Limited  
was recorded on 7/23/97

☐ is attached. A separate ☐ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.

☐ will follow.

**NOTE:** "If an assignment is submitted with a new application, send two separate letters-one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

**WARNING:** A newly executed "CERTIFICATE UNDER 37 CFR 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

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## 9. Certified Copy

Certified copy(ies) of application(s)

Country	Appln. No.	Filed
Country	Appln. No.	Filed
Country	Appln. No.	Filed

from which priority is claimed

☐ is (are) attached.

☐ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 CFR 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. 120 is itself entitled to priority from a prior foreign application, then complete item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

## 10. Fee Calculation (37 C.F.R. 1.16)

A. ☒ Regular application

CLAIMS AS FILED			
Number filed	Number Extra	Rate	Basic Fee 37 C.F.R. 1.16(a) \$790.00
Total			
Claims (37 CFR 1.16(c)) 12 - 20 = 0	×	\$ 22.00	
Independent			
Claims (37 CFR 1.16(b)) 2 - 3 = 0	×	\$ 82.00	
Multiple dependent claim(s), if any (37 CFR 1.16(d))			
	÷	\$270.00	

☒ Amendment cancelling extra claims is enclosed.

☐ Amendment deleting multiple-dependencies is enclosed.

☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 CFR 1.16(d).

Filing Fee Calculation \$ 790.00

B. ☐ Design application  
(\$330.00—37 CFR 1.16(f))

Filing Fee Calculation \$

C. ☐ Plant application  
(\$540.00—37 CFR 1.16(g))

Filing fee calculation \$

11. Small Entity Statement(s)

- ☐ Statement(s) that this is a filing by a small entity under 37 CFR 1.9 and 1.27 is (are) attached.

**WARNING:** "Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent or includes a copy of the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).

(complete the following, if applicable)

- ☐ Status as a small entity was claimed in prior application  
\_\_\_\_\_ / \_\_\_\_\_, filed on \_\_\_\_\_, from which benefit  
is being claimed for this application under:

35 U.S.C. ☐ 119(e),  
☐ 120,  
☐ 121,  
☐ 365(c),

and which status as a small entity is still proper and desired.

- ☐ A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of A, B or C above)

\$ \_\_\_\_\_

**NOTE:** Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136. 37 CFR 1.28(a).

12. Request for International-Type Search (37 C.F.R. 1.104(d))

(complete, if applicable)

- ☐ Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

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13. Fee Payment Being Made at This Time

☐ Not Enclosed

☐ No filing fee is to be paid at this time.

(This and the surcharge required by 37 C.F.R. 1.16(e) can be paid subsequently.)

☒ Enclosed

☒ Filing fee \$ 790.00

☐ Recording assignment  
(\$40.00; 37 C.F.R. 1.21(h))  
(See attached "COVER SHEET FOR  
ASSIGNMENT ACCOMPANYING NEW  
APPLICATION".) \$

☐ Petition fee for filing by other than all the  
inventors or person on behalf of the inventor  
where inventor refused to sign or cannot be  
reached  
(\$130.00; 37 C.F.R. 1.47 and 1.17(i)) \$

☐ For processing an application with a  
specification in  
a non-English language  
(\$130.00; 37 C.F.R. 1.52(d) and 1.17(k)) \$

☐ Processing and retention fee  
(\$130.00; 37 C.F.R. 1.53(d) and 1.21(i)) \$

☐ Fee for international-type search report  
(\$40.00; 37 C.F.R. 1.21(e)) \$

NOTE: 37 CFR 1.21(f) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 CFR 1.53(f) and this, as well as the changes to 37 CFR 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(f) must be paid, within 1 year from notification under § 53(f).

Total fees enclosed \$ 790.00

14. Method of Payment of Fees

☒ Check in the amount of \$ 790.00

☐ Charge Account No. \_\_\_\_\_ in the amount of  
\$ \_\_\_\_\_

A duplicate of this transmittal is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 CFR 1.22(b).

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15. Authorization to Charge Additional Fees

**WARNING:** If no fees are to be paid on filing, the following items should not be completed.

**WARNING:** Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

- ☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No. 16-1350.

☒ 37 C.F.R. 1.16(a), (f) or (g) (filing fees)

☒ 37 C.F.R. 1.16(b), (c) and (d) (presentation of extra claims)

**NOTE:** Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 CFR 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

☒ 37 C.F.R. 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)

☒ 37 C.F.R. §§ 1.17(a)(1)–(5) (extension fees pursuant to § 1.136(a)).

☒ 37 C.F.R. 1.17 (application processing fees)

**NOTE:** ". . . A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

☐ 37 C.F.R. 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. 1.311(b))

**NOTE:** Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 CFR 1.311(b).

**NOTE:** 37 CFR 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . . ." From the wording of 37 CFR 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

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SECRET

**16. Instructions as to Overpayment**

*NOTE: "... Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).*

- ☒ Credit Account No. 16-1350  
☐ Refund

**SEND ALL CORRESPONDENCE TO:**

Reg. No. 32,493

Tel. No. (203) 259-1800

Customer No.

  
SIGNATURE OF PRACTITIONER

Harry F. Smith  
(type or print name of attorney)

Perman & Green, LLP

P.O. Address

425 Post Road  
Fairfield, CT 06430

☒ **Incorporation by reference of added pages**

*(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)*

- ☒ Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added 5

- ☐ Plus Added Pages for Papers Referred to in Item 4 Above

Number of pages added \_\_\_\_\_

- ☐ Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.

Number of pages added \_\_\_\_\_

- ☐ Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added \_\_\_\_\_

☐ **Statement Where No Further Pages Added**

*(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)*

- ☐ This transmittal ends with this page.

**ADDED PAGES FOR APPLICATION TRANSMITTAL WHERE BENEFIT OF  
PRIOR U.S. APPLICATION(S) CLAIMED**

NOTE: See 37 CFR 1.78(a).

**17. Relate Back**

**WARNING:** If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. 120, 121 or 365(c). (35 U.S.C. 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

(complete the following, if applicable)

☒ Amend the specification by inserting, before the first line, the following sentence:

**A. 35 U.S.C. 119(e)**

NOTE: "Any nonprovisional application claiming the benefit of one or more prior filed copending provisional applications must contain or be amended to contain in the first sentence of the specification following the title a reference to each such prior provisional application, identifying it as a provisional application, and including the provisional application number (consisting of series code and serial number)." 37 C.F.R. § 1.78(a)(4).

☐ "This application claims the benefit of U.S. Provisional Application(s) No(s).:

**APPLICATION NO(S).:****FILING DATE**

\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_ / \_\_\_\_\_

\_\_\_\_ "  
 \_\_\_\_ "  
 \_\_\_\_ "

**B. 35 U.S.C. 120, 121 and 365(c)**

NOTE: "Any nonprovisional application claiming the benefit of one or more prior filed copending nonprovisional applications or international applications designating the United States of America must contain or be amended to contain in the first sentence of the specification following the title a reference to each such prior application, identifying it by application number (consisting of the series code and serial number) or international application number and international filing date and indicating the relationship of the applications. Cross-references to other related applications may be made when appropriate." (See § 1.14(b)). 37 C.F.R. § 1.78(a)(2).

- ☒ "This application is a  
☒ continuation  
☐ continuation-in-part  
☐ divisional

of copending application(s)

- ☒ application number 08 / 804,236 filed on 2/20/97 "  
☐ International Application \_\_\_\_\_ filed on \_\_\_\_\_  
\_\_\_\_\_ and which designated the U.S."

NOTE: The proper reference to a prior filed PCT application that entered the U.S. national phase is the U.S. serial number and the filing date of the PCT application that designated the U.S.

NOTE: (1) Where the application being transmitted adds subject matter to the International Application, then the filing can be as a continuation-in-part or (2) if it is desired to do so for other reasons then the filing can be as a continuation.

- ☐ "The nonprovisional application designated above, namely application \_\_\_\_\_ / \_\_\_\_\_, filed \_\_\_\_\_, claims the benefit of U.S. Provisional Application(s) No(s).:

**APPLICATION NO(S):**

**FILING DATE**

_____ / _____	_____ "
_____ / _____	_____ "
_____ / _____	_____ "

NOTE: The deadline for entering the national phase in the U.S. for an international application was clarified in the Notice of April 28, 1987 (1079 O.G. 32 to 46) as follows:

"The Patent and Trademark Office considers the International application to be pending until the 22nd month from the priority date if the United States has been designated and no Demand for International Preliminary Examination has been filed prior to the expiration of the 19th month from the priority date and until the 32nd month from the priority date if a Demand for International Preliminary Examination which elected the United States of America has been filed prior to the expiration of the 19th month from the priority date, provided that a copy of the international application has been communicated to the Patent and Trademark Office within the 20 or 30 month period respectively. If a copy of the international application has not been communicated to the Patent and Trademark Office within the 20 or 30 month period respectively, the international application becomes abandoned as to the United States 20 or 30 months from the priority date respectively. These periods have been placed in the rules as paragraph (h) of § 1.494 and paragraph (i) of § 1.495. A continuing application under 35 U.S.C. 365(c) and 120 may be filed anytime during the pendency of the international application."

**18. Relate Back—35 U.S.C. 119 Priority Claim for Prior Application**

The prior U.S. application(s), including any prior International Application designating the U.S., identified above in item 17B, in turn itself claim(s) foreign priority(ies) as follows:

Finland	960895	2/26/96
Country	Appln. no.	Filed on

The certified copy(ies) has (have)

- ☒ been filed on 2/20/97, in prior application 0 8 / 804,236, which was filed on 2/20/97.
- ☐ is (are) attached.

**WARNING:** *The certified copy of the priority application that may have been communicated to the PTO by the International Bureau may not be relied on without any need to file a certified copy of the priority application in the continuing application. This is so because the certified copy of the priority application communicated by the International Bureau is placed in a folder and is not assigned a U.S. serial number unless the national stage is entered. Such folders are disposed of if the national stage is not entered. Therefore, such certified copies may not be available if needed later in the prosecution of a continuing application. An alternative would be to physically remove the priority documents from the folders and transfer them to the continuing application. The resources required to request transfer, retrieve the folders, make suitable record notations, transfer the certified copies, enter and make a record of such copies in the Continuing Application are substantial. Accordingly, the priority documents in folders of international applications that have not entered the national stage may not be relied on. Notice of April 28, 1987 (1079 O.G. 32 to 46).*

**19. Maintenance of Copendency of Prior Application**

**NOTE:** *The PTO finds it useful if a copy of the petition filed in the prior application extending the term for response is filed with the papers constituting the filing of the continuation application. Notice of November 5, 1985 (1060 O.G. 27).*

- A.** ☐ Extension of time in prior application

*(This item must be completed and the papers filed in the prior application, if the period set in the prior application has run.)*

- ☐ A petition, fee and response extends the term in the pending prior application until \_\_\_\_\_
- ☐ A copy of the petition filed in prior application is attached.

- B.** ☐ Conditional Petition for Extension of Time in Prior Application

*(complete this item, if previous item not applicable)*

- ☐ A conditional petition for extension of time is being filed in the pending prior application.
- ☐ A copy of the conditional petition filed in the prior application is attached.

**20. Further Inventorship Statement Where Benefit of Prior Application(s) Claimed**

NOTE: "If the continuation, continuation-in-part, or divisional application is filed by less than all the inventors named in the prior application a statement must accompany the application when filed requesting deletion of the names of the person or persons who are not inventors of the invention being claimed in the continuation, continuation-in-part, or divisional application." 37 CFR 1.62(a) [emphasis added] (dealing with the file wrapper continuation situation).

NOTE: "In the case of a continuation-in-part application which adds and claims additional disclosure by amendment, an oath or declaration as required by § 1.63 must be filed. In those situations where a new oath or declaration is required due to additional subject matter being claimed, additional inventors may be named in the continuing application. In a continuation or divisional application which discloses and claims only subject matter disclosed in a prior application, no additional oath or declaration is required and the application must name as inventors the same or less than all the inventors in the prior application." 37 CFR 1.62(c) (dealing with the continuation situation).

(complete applicable item (a), (b) and/or (c) below)

- (a) ☒ This application discloses and claims only subject matter disclosed in the prior application whose particulars are set out above and the inventor(s) in this application are

☐ the same.

☒ less than those named in the prior application. It is requested that the following inventor(s) identified for the prior application be deleted:  
Seppo Alanara, Kalevi Kaartinen, Peter Decker, Pete Pihko, Teemu Tarnanen,  
Hannu H. Kari, Jari Maenpaa, Mikko Terho

(type name(s) of inventor(s) to be deleted)

- (b) ☐ This application discloses and claims additional disclosure by amendment and a new declaration or oath is being filed. With respect to the prior application, the inventor(s) in this application are

☐ the same.

☐ the following additional inventor(s) have been added:

(type name(s) of inventor(s) to be added)

- (c) The inventorship for all the claims in this application are

☐ the same.

☐ not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made

☐ is submitted.

☐ will be submitted.

**21. Abandonment of Prior Application (if applicable)**

- ☐ Please abandon the prior application at a time while the prior application is pending, or when the petition for extension of time or to revive in that application is granted, and when this application is granted a filing date, so as to make this application copending with said prior application.

*NOTE: According to the Notice of May 13, 1983 (103, TMOG 6-7), the filing of a continuation or continuation-in-part application is a proper response with respect to a petition for extension of time or a petition to revive and should include the express abandonment of the prior application conditioned upon the granting of the petition and the granting of a filing date to the continuing application.*

**22. Petition for Suspension of Prosecution for the Time Necessary to File an Amendment**

*WARNING: "The claims of a new application may be finally rejected in the first Office action in those situations where (1) the new application is a continuing application of, or a substitute for, an earlier application, and (2) all the claims of the new application (a) are drawn to the same invention claimed in the earlier application, and (b) would have been properly finally rejected on the grounds of art of record in the next Office action if they had been entered in the earlier application." MPEP, § 706.07(b).*

*NOTE: Where it is possible that the claims on file will give rise to a first action final for this continuation application and for some reason an amendment cannot be filed promptly (e.g., experimental data is being gathered) it may be desirable to file a petition for suspension of prosecution for the time necessary.*

*(check the next item, if applicable)*

- ☐ There is provided herewith a Petition To Suspend Prosecution for the Time Necessary to File An Amendment (New Application Filed Concurrently)

**23. Small Entity (37 CFR § 1.28(a))**

- ☐ Applicant has established small entity status by the filing of a verified statement in parent application /\_\_\_\_\_ on \_\_\_\_\_ .
- ☐ A copy of the verified statement previously filed is included.

*WARNING: See 37 CFR § 1.28(a).*

**24. NOTIFICATION IN PARENT APPLICATION OF THIS FILING**

- ☐ A notification of the filing of this  
*(check one of the following)*
- ☐ continuation
  - ☐ continuation-in-part
  - ☐ divisional

is being filed in the parent application, from which this application claims priority under 35 U.S.C. § 120.

EXPRESS MAIL NO.: EL 067 100 116 US  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Arto Lehtonen et al.  
SERIAL NO.: 09/ ART UNIT: 2744  
FILED: Herewith EXAMINER: Gelin, J.  
TITLE: A Communication Network Terminal Supporting  
A Plurality Of Applications  
ATTORNEY DOCKET NO.: 442-007078-US (C04)

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

This preliminary amendment is herewith being submitted in conjunction with the filing of a Rule 1.53(b) continuation application. The parent application of this continuation, which this application relies on for an earlier filing date, is copending U.S. Patent Application S.N. 08/804,236, filed on 2/20/97, which in turn claims priority under 35 U.S.C. §119(a)-(d) from a patent application number 960895 which was filed in Finland on February 26, 1996. A certified copy of the priority Finnish patent application has been filed in the U.S. Patent Application 08/804,236, which is the parent application of this continuation application.

It is hereby made of record that four other continuation patent applications from the parent patent application are being filed in the U.S. Patent office on even date herewith.

Please amend the Application as set forth below.

09183343 "103093  
360607 643360

In the Specification:

At unnumbered page 36 (titled "ABSTRACT"), the last line, delete "Figure 9.".

In the Claims:

Please cancel the originally filed claims 1-7 without prejudice or disclaimer.

Please add the following new claims.

-- 8. A method of transferring electronic calendar data between a first device and a second device, the second device being remote from the first device, and both the first and second device being one of a mobile station capable of communicating over a mobile communications network, the method comprising:

transmitting a calendar reservation from the first device to the second device via at least one mobile communications network, the calendar reservation including a subject and time of an event;

receiving said calendar reservation at the second device; and

storing the subject of the event of said received calendar reservation at the time of the event in an electronic calendar of the second device.

9. A method according to claim 8, and further comprising before the step of storing the steps of

allowing the user of the second device to select

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between confirming and cancelling of said received calendar reservation, and

performing the step of storing as a response to a confirmation by the user.

10. A method according to claim 9, and further comprising the step of sending a confirmation message from the second device to the first device as a response to said confirming of said received calendar reservation.

11. A method according to claim 8, wherein the step of transmitting includes transmitting said calendar reservation in a user message.

12. A method according to claim 11, wherein said user message is one of a short message, a message according to the standardized SMS message, a message according to the standardized R data field message, a message according to the standardized USSD message, a message according to the standardized SOC message, and a message according to a wireless packet radio service.

13. A method according to claim 11, wherein said user message comprises ASCII characters.

14. A method according to claim 13, wherein said user message includes an identifier identifying said user message as a calendar reservation.

15. A mobile station having means for wireless communication, wherein the mobile station comprises

an electronic calendar,

means for receiving a calendar reservation via a mobile communications network, said calendar

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reservation including a subject and time of an event; and

means for storing said subject of the event of said received calendar reservation at said time of the event in said electronic calendar.

16. A mobile station according to claim 15, and further comprising means for sending said calendar reservation in a user message.

17. A mobile station according to claim 16, wherein said user message is one of a short message, a message according to the standardized SMS message, a message according to the standardized R data field message, a message according to the standardized USSD message, a message according to the standardized SOC message, and a message according to a wireless packet radio service.

18. A mobile station according to claim 16, wherein said user message comprises ASCII characters.

19. A mobile station according to claim 16, wherein said user message includes an identifier identifying said user message as a calendar reservation.--

#### REMARKS

A favorable consideration that results in the early allowance of all of the foregoing new claims is earnestly solicited, as these claims are deemed to be patentable over the prior art of record.

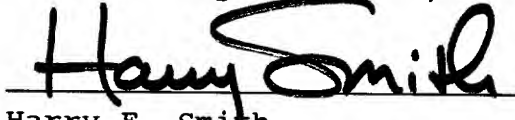
All of the claims of this continuation patent application are deemed to be in condition for allowance, and this patent application is further believed to be ready to be passed to issue. However, should there be any remaining

Serial No. 09/  
Art Unit 2744

5

issue that would impede the allowance of all of the pending claims, the Examiner is respectfully invited to contact the undersigned at any of the numbers appearing below.

Respectfully submitted,

  
Harry F. Smith

Reg. No.:32,493

October 30, 1998  
Date

Perman & Green, LLP  
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"SECRET"

## A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

### 5 FIELD OF THE INVENTION

The present invention relates to a terminal for a communication network, the terminal being capable of supporting a plurality of applications and having means of communicating user messages. The present invention also concerns a system  
10 in a communication network comprising transmitting terminals and receiving terminals being capable of supporting a plurality of applications, both of said terminals having means of communicating user messages.

### 15 BACKGROUND OF THE INVENTION

At present, communicators are being developed which, in addition to ordinary mobile station functions, also have data processing facilities, which enable, e.g., the maintenance of a calendar, and the sending of a fax message and electronic mail. The communicators may have or may support several different applications  
20 like organiser type devices. One type of communicator has been presented in Patent Publication US 5 422 656, comprising a user interface having a traditional alpha-numeric keyboard-like keyboard with which it is easier to type, e.g., text messages. In the publication in question, the keyboard has been implemented by means of a touch display. However, as traditional mobile phones develop,  
25 especially as the user interface and displays develop further, also more advanced operations will be possible by a traditional mobile phone like device.

Publication WO 94/23394 presents an electronic greeting card communication system, comprising an electronic mail server for a communicator having different  
30 types of greeting cards, which can be browsed and sent to a similar communicator, for example, by using radio communication. A drawback of the system is that the greeting cards in question can only be sent to a similar communicator. Therefore, the sender should know whether or not the receiver has a communicator supporting the greeting card communication system. In addition,  
35 for the implementation of the system, an off-line electronic mail server, for storing different types of greeting cards, should be separately connected to the network for the service in question. Another drawback is that, because the system uses ordinary radio communication to transmit greeting cards, the telephone line of the

communicator is engaged during transmission. By means of the communicator, presented in the publication, graphic images including hand written text can be transmitted. The transmission of such an image or a mere hand written message is quite slow due to the large amount of information. Publication WO 94/23394 only discusses the sending of information relating to one application or service, i.e. a greeting card application. As communicator-like devices have several different applications a problem arises of how to send and handle information in relation to different applications. In the WO publication a separate electronic mail server has been arranged for the specific greeting card service. However, providing a separate electronic mail server for each application of a communicator would lead to a rather complicated and expensive solution. And even then one would face the problem of how to handle information relating to different services in the terminal device, e.g. in the communicator.

## SUMMARY OF THE INVENTION

The present invention concerns a terminal for a communication network, the terminal capable of supporting a plurality of applications and having means of communicating user messages wherein it comprises means for receiving user messages having data and a header relating to one of said applications and means for addressing the data to a respective application according to said header. Accordingly the terminal may readily have a plurality of different applications on such can be arranged into the terminal at a later stage. The later addition of applications can be done by direct contact of over the air contact to another device. One user message may contain data relating to one application indicated by the header, or a user message could contain data relating to several application, indicated by different headers, e.g. so that the header indicating a specific application is followed by the data relating to that specific application.

User messages contain a limited amount of information and are, therefore, quick to transmit. One type of user message is the so called short message. The invention is especially suitable to be implemented by the use of short messages. The mobile phone system according to the standard IS-136 uses a so called R data field for the transmission of similar short messages. Another type of a user messaging function known in the GSM system according to which SMS like messages can be sent as well is USSD (Unstructured Supplementary Service Data, which is more closely defined in the GSM specifications, e.g. in the following documents: TS GSM 02.04, TS GSM 02.30, TS GSM 02.90, TS GSM 03.38, TS

GSM 03.40. A similar messaging form called SOC (Service Operator Code) exists in the mobile phone system according to the standard IS-136. Communication forms like SMS, R data, USSD and SOC are here called user messaging functions and the messages are called user messages despite the fact that such messages can as well be sent by an operator and not only by a user. The benefit with this kind of communication is that it does not reserve the voice call channel either at all or at least not continuously.

Similar benefits exists in packet switched communication. A protocol based on PRMA (Packet Reservation Multiple Access) for relaying packet switched information is known in mobile communication networks. It is also called "Packet Radio". The PRMA is a technology for multiplexing packet formatted digital speech or data into a time divided carrier wave. A packet radio service, GSM GPRS (General Packet Radio Service) under development for the GSM mobile radio system is used as an example. GPRS is a new GSM service offering packet radio service for GSM subscribers. GPRS reserves radio resources only when there is something to transmit, allowing the same resources to be shared by all mobile stations according to their needs. Accordingly also packet radio transmissions may be used for transmitting user messages, that reserve the communication channel for only short periods.

The intention is that any user messages can be used, but in following mainly short messages will be referred to as an example. In addition to being fast to send, the advantages of a short message service can be utilised, such as not reserving the voice channel. Application related information can either be pre-stored in a terminal memory (permanent memory) or a user may store the application related information in a terminal memory (cache memory) by contacting a server by means of a terminal. Depending on the application, the user may enter user input or modify the information in the applications. In another application the information relating to an application may be sent by a service provider and the information may be such that it is not possible for the user to modify it, only to request the service provider to modify it. The information readily printed in the application can also be transmitted. An application type identifier or header is preferably added to the transmission, so that a receiving terminal identifies the short message as not an ordinary short message, but as a short message containing information relating to and intended for a specific application. The identifier can be a code in an address or a control field of the short message, or it can be a code in the message part of the short message. Because it has been realised that the short message

service, already existing in the mobile station system, can be utilised for sending information on applications, the advantages are, e.g., that there is no need to establish an off-line server for sending the application related information, such as, for example, in the system presented in Publication WO 94/23394. Especially advantageous is that one and the same server, i.e. the SMS server (the Short Message Service Centre SM-SC) can be used for sending and forwarding information relating to any application, so there is no need to have separate servers for each application. The SMS server will forward any short message and the terminal will address the information to the correct application according to the header or identifier in the message. And since a short message can be sent simultaneously with a circuit-coupled connection, the sending of the application related information does not engage the terminal's communication line, e.g., in case of a simultaneously incoming call. A network like the GSM network is maintained by several operators and usually each operator has at least one SMS server of their own. In this case naturally any SMS server or several servers may be used for the invention.

A terminal according to the present invention is wherein it comprises means for receiving user messages having data and a header relating to one of said applications and means for addressing the data to a respective application according to said header. Another terminal according to the present invention is wherein it comprises means for sending data relating to one of said applications in a user message and means for adding a header to the user message, the header indicating the respective application that the data relates to. Correspondingly, a system according to the present invention is wherein the transmitting terminals comprise means for sending data relating to one of said applications in a user message and means for adding a header to the user message, the header indicating the respective application that the data relates to, and the receiving terminals comprise means for receiving user messages having data and a header relating to one of said applications and means for addressing the data to a respective application according to said header.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be discussed below in detail by referring to the enclosed drawings and appendices, in which

- Figure 1 illustrates the flow of a short message from one mobile station to another,
- Figure 2 illustrates connections of a mobile station system to a short message service centre,
- Figure 3 illustrates a user interface of an ordinary mobile phone,
- Figure 4a illustrates segmenting of a message into frames in transmission,
- Figure 4b illustrates reconstruction of a message in reception,
- Figure 5 illustrates a frame of a short message,
- Figure 6 illustrates one application according to the present invention,
- Figure 7 illustrates another application,
- Figure 8 illustrates the transmission of the application related information, illustrated in figure 7, from the system's viewpoint,
- Figure 9 illustrates the implementation of the terminal according to the present invention,
- Figure 10 illustrates in sequence the function of one application in the terminal according to the invention,
- Figure 11 illustrates in sequence the function of one application in the terminal according to the invention, and
- Appendix 1 illustrates the application related information, illustrated in figure 7, presented in characters.

## DETAILED DESCRIPTION

In following the invention will be explained in more detail by using as an example one form of user message function, the short message service. For understanding the invention prior art relating to short messages will first be described by referring to Figures 1 - 5, and the embodiments of the present invention will be explained by referring to Figures 6 - 11, and to Appendix 1.

In digital mobile communications systems, as in the GSM system, it is possible to send so-called short messages. In the GSM system, this is known as the SMS (Short Message Service). Thus, in addition to telephone calls and data transfer, the GSM system also provides, in the form of a short message service, a paging system-like service. However, the short message service known from the GSM system is considerably more advanced than an ordinary paging system. By means of a mobile station, text messages can be both received from and transmitted to another mobile station. One of the advantages of the short message service of the GSM system is also that the short message can be sent or received at the same

time as an ordinary circuit-coupled communication is open, e.g., during a call. Thus, the sending of a short message does not keep the mobile station engaged in case of a possible incoming call.

5 The advantage of short messages as compared to telephone calls is that they can be sent to a receiver although the receiver cannot be contacted at the time the message is being transmitted. This has been implemented by dividing the transmission of the short message, from a first mobile station to a second mobile station, into two parts as illustrated in Figure 1: from a transmitting mobile station  
10 MS1 to a SM-SC (Short Message Service Centre), wherein the short message is stored and sent further to the actual destination, i.e., to a receiving mobile station MS2, as soon as contacted. In Figure 2, the connection of the short message service centre SM-SC to a mobile station system has been illustrated in more detail. Below, the transmission and flow of short messages between different  
15 interfaces, known for prior art, will be discussed by referring to Figures 1 - 5.

The structure of a mobile station system and connections for transmitting short messages are illustrated in Figure 2. Mobile stations MS are connected to base stations BTS by means of radio communication. The base stations BTS are further  
20 connected, through a so-called Abis interface, to a base station controller BSC, which controls and manages several base stations. The entity formed by a number of base stations BTS (typically, by a few dozen base stations) and a single base station controller BSC, controlling the base stations, is called a base station system BSS. Particularly, the base station controller BSC manages radio  
25 communication channels and handovers. On the other hand, the base station controller BSC is connected, through a so-called A interface, to a mobile services switching centre MSC, which co-ordinates the formation of connections both from and to mobile stations. A further connection is made, through the mobile service switching centre MSC, to outside the mobile communications network. The  
30 aforementioned short message service centre SM-SC is coupled to the mobile services switching centre MSC.

When a user wants to send a short message by means of the mobile station MS1 (Figure 1), he/she writes a message to be transmitted (using a user interface of  
35 the mobile station) and gives the phone number of the mobile station MS2, i.e., an identifier of the mobile station MS2, whereto the message is going to be transmitted. In addition, the mobile station should have the contact information, i.e., the phone number of the short message service centre SM-SC. Normally, this

has been stored in the memory of the mobile station, in which case it is not necessary to separately input the phone number in connection with the sending of each short message. Thus, when sending a short message, the message goes from the mobile station MS to the base station BTS, and from there, through the base station controller BSC and the mobile services switching centre MSC, further to the short message service centre SM-SC. The short message is stored at the short message service centre SM-SC, wherefrom it will be sent further to the receiving mobile station MS2, in which case the route of the message is the same as in transmission, but in the opposite direction. The short message service centre SM-SC will be informed whether or not the mobile station MS2 has received the short message. Thus, it can re-send the short message, if the mobile station MS2 has not received it for some reason.

Additionally short messages may be sent by a personal computer PC. In this case the mobile services switching centre MSC has a connection to a server GTW (Gateway), which has a connection to e.g. Internet. Thus a computer PC having a connection to Internet (or directly to the server GTW as shown by the broken line) may fetch a WWW (World Wide Web) page from Internet, which physically can be found e.g. from the server GTW. Optionally a service provider or operator may have a separate server GTW having a connection to the mobile services switching centre MSC for sending short messages or other user messages. When using such a WWW page for sending a short message the user inputs the connection information (e.g. phone number) of the receiving terminal MS2 and the message to be sent, whereby the message is transferred via Internet and the server GTW to the mobile services switching centre MSC and further to the short message service centre SM-SC from which the message is directed to the receiving terminal MS2 via the mobile network.

By means of the short message service SMS of the GSM system, it is possible to send, at a time, a message the maximum length of which is 160 characters. The characters are seven-bit ASCII (American National Standard Code for Information Interchange) characters and, therefore, the maximum length of a message in bits is 1,120 bits, i.e., 140 bytes. Ordinary mobile stations, as the one illustrated in Figure 3, have a small display and an advanced keyboard by means of which it is possible to write short messages, i.e., input different types of alpha-numeric characters. The received message is displayed on the display of the mobile station, which enables the display of alpha-numeric characters, as illustrated in Figure 3.

As is well known, transmissions in the GSM system have been divided into frames. When the length of a message to be transmitted exceeds the permissible maximum length of a frame FR, the message M must be segmented into parts M1 - M4, and sent in several frames FR1 - FR4, as illustrated in Figure 4a. In reception, the mobile station reconstructs the message M, divided into several frames FR1 - FR4, as illustrated in Figure 4b. At a radio interface (Figure 2), the maximum length of a frame is normally 168 or 184 bits and, therefore, a short message, the maximum length of which is 1,120 bits, must be segmented into several frames. Figure 5 illustrates a frame, a so-called LAPDm frame (Link Access Protocol for the Dm channel), to be transmitted at a radio interface, which has normally been divided into three fields. The first field is an address field ADD, which contains the address of the destination of the message (i.e., a receiving mobile station identifier), given in several bytes. In the GSM system, signalling messages are also transmitted within corresponding LAPDm frames. In radio communication, there can simultaneously be two message flows independent of each other: signalling messages and short messages. These two different flows are separated from each other by means of a service access point identifier SAPI to be added to the address field ADD. Its value can be 3, indicating signalling, or 0, indicating a short message. The second field is a control field CTRL, which contains the sending frame and receiving frame numbers N(S) and N(F). The third field is a data field INFO, containing the actual information or data, which contains a maximum of 168 bits of information, i.e., the contents of the actual short message.

In the present invention, using short messages as an example, the transmission of each application related information will be identified by means of a specific code, i.e., an identifier, which enables the receiving terminal to process the received message directly into an application, as specified, containing the received data. The identifier is preferably implemented by using ASCII characters in an information field of the short message transmission frame, i.e., in a field INFO (figure 5), which contains the actual short message in characters. Alternatively the identifier may be in the form of some other character or string code, such as bits, since for sending a short message the data is anyway converted into bits. Because the information relating to the applications is transmitted in a short message, it can also be received by means of an ordinary mobile station, which does not support the application service, but is capable of transmitting and/or receiving short messages. By placing the application identifier in the field INFO,

there is also the advantage that in an ordinary mobile station, which does not support this type of application service, but is capable of transmitting and/or receiving short messages, the application identifier is displayed to a user of the terminal, e.g. a communicator and, hence, the user notices not having received an ordinary short message, but the information relating to a specific application. In addition, a user of this type of ordinary mobile station can also transmit a message, such as mentioned above, by first writing, on the message, the identifier of the application in question in characters, and the rest of the information correctly divided. The reception of such a transmission by means of a terminal, according to the present invention, will produce a fully received application related information record.

Alternatively, the application identifier is formed as a specific bit code in the address or information field of the short message (see figure 5). Furthermore, in this case, an ordinary mobile station can receive the transmitted information relating to the specific application, but the user cannot see, in connection with the message, that the received message is the information for a specific application. In this case, the information for this type of application cannot be sent by means of an ordinary mobile station, unless it is modified, so that by entering a specific command, it will add the aforementioned bit code because, otherwise, the ordinary mobile station is unable to inform of the application identifier.

Figure 6 illustrates an example of an application with an application record pre-stored in a terminal, the user input information (the application record) on which can be sent to another terminal as a short message. This application type is a so-called "Business Card". The application runs business card contents and contains the following information: name, position, company, contact information, etc. Each information can be in its own field or the application may only have one field, whereinto all the information is fed. Figure 6 also illustrates the transmission of the information on an application as a short message. In this case, an identifier of the application type may be, e.g., 'BC' or 'Business Card' as illustrated in the figure. A terminal, according to the present invention, adds the application identifier (e.g. as letters or in other form) to the beginning of the information field of the short message to be transmitted first. The contents of the different fields ends automatically in a line feed character. On the basis of this character, a receiving terminal is capable of dividing the received information into the corresponding fields on the application. If this type of message was transmitted as a short message from an ordinary mobile station, a user would write, at the beginning of

the message, an application identifier, i.e., in the case of Figure 6, 'Business Card', after that a line feed character [cr], then the information on the application in succession or by field (depending on the application specification), i.e., first the information in the name field and a line feed character, etc. A received 'Business Card' can be stored in a memory of the terminal, where business cards can thus be stored in an electronic form and can be retrieved from the memory and looked at by means of the Business Card application. The information in a Business Card application may of course vary depending on the device. In some terminals it could mean e.g. only the name and phone number, which can be used as a Short Dial application. Accordingly the invention could be used to update contents of a Short Dial application. In this way the user could make a backup of the contents of the Short Dial application by sending the contents to a service center for storage. If the terminal (e.g. a mobile phone) is later lost/stolen or destroyed in which case the user will have to acquire a new terminal, he/she can in addition to activating the terminal, also download (retrieve) all Short Dial application contents to the terminal. Of course the same solution can be used for the contents of any application in the terminal. Several other applications will be explained here.

In the following, as an example, other types of applications will be discussed. These applications can be pre-stored in a terminal or arranged into the terminal (by programming) at a later stage.

An application "Call Me Back" may contain a person's name, telephone number, address, etc., as well as a message that the person should call back. This information can be divided into separate fields or be in the same field, as presented above. The aforementioned message to call back may be inseparably linked to the "Call Me Back" application and/or "Call Me Back" (as text) can be written as an identifier, which will also be displayed on the display of an ordinary mobile station, in which case, a user of the mobile station in question receiving the message will see that it is a request to call back. The transmission of the "Call Me Back" application related information can be connected to an outgoing call, so that if the destination terminal does not respond, the transmitting or calling terminal will ask the user (the caller) whether a "Call Me Back" notifier should be sent, in which case, if the user's response is positive, it will run the application in question on the display with the telephone number of the caller (which it can access, e.g., from one's own SIM card, Subscriber Identity Module) ready input on the application data fields. The user may input the rest of the information and modify it on the display by the "Call Me Back" application. When application related information is

sent as a short message, the terminal automatically offers the telephone number of the receiver as the destination of the message, which it can pick up from the information of the call left unanswered.

- 5 An identifier of an application 'Meeting Proposal' can be 'Meeting Proposal', and the information in the application may contain a convenor's name, time and place of the meeting, as well as its subject. If, in a terminal, there is also an electronic calendar application, the transmission of the application related information in question can be connected to the functioning of the calendar application so that,
- 10 as a response to the transmission of information related to this type of application (Meeting Proposal), a reservation for the meeting at the time in question is made in the calendar. The specific application preferably picks up the time of the meeting from the application and enters, in the calendar, at the time in question, the rest of the information on the application, such as the place and subject of the
- 15 meeting, as well as the name of the convenor. Correspondingly, when receiving this type of application related information, the terminal automatically searches, in the calendar, for a statement of what may already have been agreed upon at the time in question (if entered in the calendar). Thus, the receiver can quickly decide whether to answer 'Yes' or 'No' to the meeting proposal. When such an answer is
- 20 sent, the terminal establishes an application 'Meeting Proposal Answer', whose identifier can be, e.g., 'Meeting Proposal Answer', and the information in the application may include a receiver's name, a time and place of the meeting, subject, answer (Yes/No), and comments. In this case, the calendar application in the terminal of the receiver, i.e., the sender of the meeting proposal, is preferably
- 25 arranged, so that it either confirms or cancels the reservation made in the calendar.

- Furthermore, as a continuation for the 'Meeting Proposal' application, there may be, in the terminal, an application 'Meeting Confirmation', whose identifier is, e.g.,
- 30 'Meeting Confirmation', and the information in the application may contain a convenor's name, a time and place of the meeting, and its subject. The terminal preferably offers to send this application related information automatically to all those who answered 'Yes' to the meeting proposal. In this case, the mobile stations or communicators receiving the information related to this application will
- 35 confirm the reservation in question in the calendar.

Correspondingly, in the same way as with the 'Meeting Proposal' application, other similar applications can be arranged in the terminal, e.g., an application 'Free

Time Query', whose identifier can be, e.g., 'Free Time Query', and the information in the application may contain a sender's name, a time, a place, and a subject, which a user may freely fill in, e.g., tennis, dinner, etc.

- 5 The terminal preferably functions in this connection in the corresponding way, both in transmission and reception, as in connection with the meeting proposal applications, i.e., it makes a reservation in the calendar, enables the response to a query by means of another application, and, furthermore, enters in the calendar a possible confirmation or cancellation.

10

By means of an application 'Service DTMF Commands', information can be received, e.g., from a network operator in order to utilise services provided by the operator. An application identifier can be 'Service DTMF Commands', and it may have fields for a sender's name, a DTMF command, and an explanation field. The

15

command can be, e.g., a password, a user identifier, or something else related to the services provided by the operator. A user may use the received command, e.g., a password, when utilising the offered services, in which case, the user does not have to input the password through the keyboard, because the password can be obtained directly from the application (or the information in the application) in

20

question. Other applications to which information may be received from a network operator are any applications which require some settings in the terminal before an application can be used. An example is an 'Internet Access Point' application which contains information necessary for the terminal to use a WWW browser for example. This information may be provider name, phone number, modem

25

initialisation information, server information, IP address (Internet Protocol). Another example of an application that needs some settings is a Fax Box application. A faxbox is a service implemented e.g. in a server, which receives all faxes for a specific user. The user can then retrieve the faxes from the faxbox. For retrieving faxes the terminal needs to have the contact information to the server.

30

This could be implemented so that when the terminal has received a new fax to the faxbox, the terminal receives a notification in a user message of a received fax, but additionally the user message would include a UID information (Unique Identifier), i.e. contact information to the faxbox server and other necessary information, such as filename of the fax and a password needed. The Fax Box

35

application could function either manually, i.e. by user execution, or automatically so that the terminal contacts the faxbox server automatically for retrieving a received fax according to the identifier information contained in the notifying user message. The contact can be made as fax call to retrieve the fax. Optionally it

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could be a user message sending the identifier information back to the server and additionally the fax connection number of the terminal so that the server then can contact the terminal for sending the received fax to it via a fax call.

- 5 Another surrounding for use of the invention is for solutions relating to intelligent traffic systems, which use mobile station like devices as terminals. The terminal according to the invention may thereby have different traffic related applications. One example is a 'Position' application with which position requests and responses may be sent/received in user messages according to the present invention. Different solutions exist for determining the position. The application "Position" may contain position information of a specific address or point of interest as well as the description of the corresponding position, a flag describing the reason or mode of transmission, and a reference number in case of a response message. After dividing the received information into the corresponding fields, the receiving terminal stores the received 'Position' application record in a local memory. The terminal can also send its own position or a stored position information in a user message to another terminal or to a server. This can also be done automatically, e.g. in case of emergency situations. For emergency situations the terminal may have separate "Emergency Indication" or "Panic Indication" applications which automatically include information about the sender, which the sender may modify in the application, about his vehicle and his position and other relevant information needed for emergency situations.

- Additional applications for traffic purpose is for example "Trip Request" and "Trip Response" applications (or generally "Travel" application), which is a travel assistance application. In this application the terminal can send out a Trip Request, preferably containing the actual position of the terminal as a starting point and a selected position out of the stored position application records for the destination of the trip. As a response to a Trip Request the terminal may receive 'Trip Response' messages, which may contain instructions for the trip, such as turn instructions or public transport connections.

- Also the terminal may have a Service application with information that can be important for service purpose such as the original serial number of the terminal, manufacturing month, repair month and month when modifications have been done (e.g. modifications to software). The information in the Service application can be sent in a user message from the terminal to for example the operator or a service station.

Another possible application is a Phone Book application for sending phone number queries to a service provider keeping a Phone Book service. The query may include information like name, city of residence, landline/mobile number etc.

5 As a response the service provider sends a user message which has the phone number or numbers and for example the information that the user sent originally.

Another type of application which will provide the terminal with many possibilities for having additional services and applications is a "Menu" application, in which  
10 the terminal includes an application which is capable of creating menus in the terminal according to a received user message. The menus are preferably stored in a permanent memory, such as memory 14 in Figure 9 in order to create menus, which can be used permanently in the terminal. The user message contains information according to which the "Menu" application creates or updates menus  
15 in the terminal. This allows access to a big variety of services, which the operator can update in the user's terminal over the air, i.e. without the need for the user to take the terminal to a service place. Operators are provided with a very powerful tool to personalize the handsets their subscribers use. This tool is operator specific menu structure in the handset which can be different from subscriber to subscriber, if needed to. The menu structure can be dynamically updated over the  
20 air without any user assistance. In following is an example of menus that can be created and updated and which thereby can provide the user with additional services accessible by activating the command in a menu. Originally the terminal may include some basic menus or no menus at all. All the menus and sub-menus  
25 shown in the following example can be created by sending a user message relating to the Menu application.

## MENU:

```

    Phone Settings
    Operator Services
        Call Customer Service
        Download Ringing Tones
            Rock around the clock
            Those were the days
            Smoke on the water
        Download SIM Software
        New Offerings
        <any operator specific supplemental service>
    Local Services
        Join Wal Mart direct-ad
        Traffic at Dallas I-75
        Thunderstorm Warning!
    Personal Services
        BigBook
        Yellow Pages
        Stock NOK A
        US Weather
        Send eMail
        Find Restaurant
        Holiday Travel Inc.
    Memory Settings

```

Accordingly the menu or menus can include main-menus and sub-menus as shown above, where the main menus Operator Services, Local Services and Personal Services include sub-menus. These sub-menus may further be divided into sub-menus, e.g. sub-menu Download Ringing Tones can be divided into sub-menus according to ring tone melodies (Rock around the clock, Those were the days, Smoke on the water) which can then be chosen as ring tones by selecting the specific sub-menu and activating it as a command. The command is sent to the service provider as a user message according to the invention and as a response to the user message the operator may send the ring tone coded into a user message which can then be stored into a ring tone memory of the terminal.

Selections made in sub-menus cause wide variety of actions. Entries in the sub-menus can be associated with URL (Uniform Resource Locater) information, which can be used to fetch information from Internet, send email to Internet recipients, etc. In addition, supplementary services can be initiated directly from these entries; a special form of URL can be used to convey supplementary service

related information or a call or user message. Actions may cause information to be sent to the terminal by a network entity, e.g. enables selection and then downloading of ringing tones as explained above. Thereby the Operator Services menu can cause information to be fetched from Internet based on URL information, it can cause email message to be sent to a recipient, it can cause operator specific supplementary service strings to be sent to the network, or it can cause call initiation. The Local Services menu support services that are targeted to a specific geographical area. A menu is generated from 'volatile' services that are available in a certain area, at a certain time. The users can browse through these services, and pick those that interest them. This facility provides an easy way to direct information (or advertisements of services) to phone users traveling through or in a geographical area. For example, one of the services, "Traffic at Dallas I-75" could become available as the phone user approaches the Interstate highway 75 in Dallas area. Instant traffic information can be achieved by selecting the service from the menu. The Personal Services menu can be compared to the bookmark list in a normal WWW browser (World Wide Web). The phone users have the ability to add items to the list, to edit them, and to remove them. The Personal Services menu enables users to easily initiate wide variety of services. Service information can be moved from the list of operator specific or local services to the personal service list. Again, Personal Services menu can cause information to be fetched from the Internet based on URL information, it can cause email message to be sent to a recipient, or it can cause operator specific supplementary service strings to be sent to the network or it can execute a call or cause a user message to be sent. For example the sub-menu command US Weather will result in the terminal receiving information on the weather in the United States.

Menu creation will be explained in more detailed in following. Menu creation is controlled and implemented by a processor and the Menu application which is stored in a memory and run by the processor. In following a protocol is explained according to which the Menu application may be implemented as software run by a processor. The terminal will be described in more detail later in relation to Figure 9.

The protocol defines predetermined commands according to which creation and change of menus and menu structures are controlled. There are four Item primitives in the protocol which are add, remove, list, and item capability. These

item primitives will be accompanied by other menu-item definitions as will be explained.

The first primitive item is item-add, which adds a menu or sub-menu. The command sequence may include following definitions, which can be sent to the terminal in a user message:

<item-add> menu-item-token

menu-group-name

menu-item-name

menu-item-type

menu-item-help

menu-action-list

The definition menu-item-token can be an optional command to be used by the server for authorization purposes if security is needed, if not then it can be omitted. Once a menu item has been sent to a terminal with a menu-item-token set, no command can be given to change or remove the existing menu-item without the same menu-item-token. This kind of authorization feature can be used in connection to other applications described here as well, not just in relation to the Menu application. For example a ring tone would be updated only if it is accompanied by the correct authorization word or code, like the menu-item-token. The definition menu-group-name specifies the menu group into which the menu item with name menu-item-name is put. If a menu item with the same name in the same group already exists (and the server is authorized to update the menu item by the correct menu-item-token), then the existing menu-item is replaced with the new one. The name of the menu group is placed in apostrophes in context with the definition.

The definition menu-item-name defines sub-menu names or commands under the menu group (or main menu). Likewise the name of the sub-menu is placed in apostrophes in context with the definition.

Both menu-group-name and menu-item-name have a reserved character of ':' which has a special meaning of line-feed inside the menu group name, i.e., the name "phone:settings" menu item name will show on a terminal as 'phone' on the first line, and 'settings' on the second line. Additionally menu-group-name has a reserved character of ';' which has a special meaning of indicating change of hierarchy level in multiple hierarchy menus.

Menu-item-type indicates what is the type of the menu item. The menu item can have the following types the explanation of which is below: normal, volatile, selected (volatile), and link

Normal menu items are stored in the handset normally.

- 5 Volatile menu items are one-of-menu selection items for multiple choice menu items.

Selected (volatile) menu item indicated the currently active volatile menu item.

- 10 Link menu items indicate to the terminal that it must request the volatile selection items from the server.

The definition menu-item-help is a text string which is shown when the user of the handset needs help regarding the current menu item. It is handset specific does the handset automatically show the help text when for example an idle timer expires. Similar additional definitions may be tied with menu-item-help as was described above for menu-group-name and menu-item-name.

- 15 The definition menu-action-list is a list of actions which can be activated from the menu. The actions can be for example of the type action-send-message or action-call-control. Action-send-message causes a user message to be sent in one of many methods. The method is dependent on message type, which can be any user message as has been specified earlier (SMS, USSD, R data, SOC, Packet Radio). Action-call-control causes a call to be made in one of many methods. The method is dependent on call-control-type, which can be voice call, data call, fax call, or ss ( a supplementary service string is sent to the network).

- 25 The second primitive item command, item-remove, causes a menu item identified by menu-group-name and menu-item-name) to be removed from the terminal provided that authorization (based on menu-item-token or on an authorization list) does not fail. The command sequence can be following:

<item-remove> menu-item-token

- 30 menu-group-name  
menu-item-name

- 35 The third primitive item command, item-list, causes the terminal to send a list of menu-item-names to the server from which this command was originally sent. The server can specify the menu for which the list of items is requested. When menu-

```
<item-list> menu-item-token
menu-group-name
```

The fourth primitive item command, `item-capability`, can be used to add or to remove extra capabilities from a menu item. This command can be used e.g. to add an icon to a menu item according to the specified capability. The command sequence can be following:

```
<item-capability> menu-item-token
menu-group-name
menu-item-name
menu-item-capability
```

Authorization to change menus may be defined more closely by authorization primitives. There are three authorization primitives which are add, remove, and list. Authorization lists may especially be used for operator and manufacturer menus. It is implementation specific how many entries the terminal is capable of storing in the authorization list of each menu. The authorization primitives and commands for entering them into the terminal can be implemented in a similar manner as was described above for menu-item primitives. The authorization commands are privileged in such sense that they will be accepted only for a menu with authorization list active, and when sent from an already authorized server.

The first primitive authorization command, authorization-add, can be used to add one or more new authorized servers to the list of authorized servers for the given menu (menu-group-name). The menu-authorization-server-list comprises one or more lines of information, each defining one authorized server. For GSM/SMS, an authorized server is defined by a pair defining identity of the short message service centre and of the server, e.g. (MS-ISDN of a SMSC which is the mobile subscriber international ISDN number for the SM-SC; MS-ISDN of the server, which is the mobile subscriber international ISDN number for the authorized server). The command sequence can be following:

```
<authorization-add> menu-group-name
menu-authorization-server-list
```

The second primitive authorization command, authorization-remove, can be used to remove one or more authorized servers from the list of authorized servers for the given menu (menu-group-name). The command sequence can be following:

<authorization-remove> menu-group-name

5 menu-authorization-server-list

The third primitive authorization command, authorization-list, can be used to request the handset to send the list of privileged servers for a requested menu (menu-group-name). The availability of this command depends on the handset implementation. The command sequence can be following:

10

<authorization-list> menu-group-name

The Menu application has stored the meanings of different commands. This may be done for example in the form of a script interpreter as software in the terminal.

15 An example of script interpreters is an interpreter understanding a specific programming language. Accordingly, when a specific command or sequence of commands is received in a user message according to the invention, the Menu application implements operations accordingly, such as adding or removing menus and/or sub-menus. The above are to be treated as examples. Naturally  
20 different commands may be used than the above, and they may be shorter in order to fit more commands into one user message (e.g. into a short message).

When using the Menu application with short messages the number of one or several short message service centres (SM-SC) can be related to a menu so that  
25 when activating a user message by a menu item the message would be sent via a specific short message service centre or to any SM-SC of a specific list. The numbers of a specific or different SM-SCs can be sent from the network to the terminal in a user message, e.g. when a menu is created or updated. This would allow more possibilities for services and quicker and more reliable transmission of  
30 user messages, when a special service (or the server providing that service) accessible via a specific menu command is connected to a specific service centre.

An example of creating a menu for ringing tones is disclosed in Figure 10 as a sequence of displays to illustrate what the user sees on the display. The  
35 command "NEW RINGING TONES" is sent in a user message to a server of a ringing tone service provider in order to request for latest ringing tones. As a response the server sends a user message containing information relating to the

Menu applications for creating a menu, from which the user can select a new ringing tone. The user selects the desirable ringing tone from the menu (selects ring tone 'Popcorn'). The selection activates a user message to be sent to the server indicating the desired ring tone. After a while the terminal receives the ring tone from the server. A received ringing tone is indicated to the user using the "RINGING TONE RECEIVED" notification. The user can accept or reject the ring tone. Once the user has given acceptance, the selection menu with the options "Save" and "Playback" displays. If the user selects the Save -option the received ringing tone is saved to the phone and it appears to a ringing tone options menu. The saving is indicated to the user by displaying a "SAVED" confirmation note after which the phone goes to the idle state. If the user selects the Playback - option the received ringing tone is played to the user and after that the original selection list displays again. If the user gives a rejection of the new ring tone, the received ringing tone is discarded, the selection list is removed from the screen, and the phone goes to the idle state.

Another example of application of commands producing functions in a terminal will be described in following with reference to Figure 11. The example relates to querying the timetable of certain flights. First it is assumed that the user already has a created menu command for this purpose in the terminal, which command the terminal may have received according to the invention. The menu item FINNAIR FLIGHTS TIME-TABLE includes readily the contact information of the server to which the request is to be sent or if the terminal has a specific contact, then the request will be forwarded from that contact to the server with the service to be requested, i.e. the flight schedules. By activating the menu item FINNAIR FLIGHTS TIME-TABLE a first user message includes a code or signs which indicate sending a request, e.g.

1) The first sent user message is following:

??? FLIGHTS

where "??? FLIGHTS" is a command indicating to the receiving server that it is a request for Finnair flight time-tables. The user does not see the contents of the message but rather sees notes on the displays indicating that the request is being sent, that it has been sent and that the user shall wait for a while until a reply comes. These notes are shown after step 1) in Figure 11. After this the terminal receives a user message from the service provider, e.g.

2) The first received user message is following:

++Finnair flight queryCR

<From:CR

<To:CR

<+Date: CR

where ++ indicates to the terminal to wait for a reply and the text after that is displayed on the terminal screen for a while and CR (Carriage Return) ends the command row. The sign '<' indicates a letter entry mode so the text after the '<' sign is displayed on the terminal screen as seen in Figure 11 and it allows the user to enter letters. In this example OUL is entered indicating that the request concerns a flight from the city of Oulu. The user ends the entering by a predetermined command (e.g. pressing of a specific key). Similarly a next entry mode indicating destination is showed on the display, whereby the user enters HEL entered indicating that the request concerns a flight to the city of Helsinki. The sign '<+' indicates a number entry mode so the text after the sign is displayed on the terminal screen as seen in Figure 11 and it allows the user to enter numbers, which in this case is the date of the requested flight. When the last command is reached the terminal asks if the form is finalised and if the request can be sent, and if so the terminal creates and sends a second user message containing the entered information, e.g.

3) The second sent user message is following:

++Finnair flight queryCR

<From:OULCR

<To:HELCR

<+Date: 041296CR

which the service provider (server) is able to interpret according to the predetermined commands. Again the user does not see the contents of the user message, but is displayed predetermined notes on the terminal screen. As a response to this request the terminal receives a second received user message from the service provider, e.g.

4) The second received user message is following:

Finnair flights from OUL to HEL 04/12/96:CRAY3434, 06:05 AY3436, 07:00 AY3438, 07:30 AY3440, 10:15

whereby the terminal displays the relevant information (not the application specific codes) to the user as shown in Figure 11 allowing the user to scroll through the information (e.g. with arrow keys or other scrolling means) and as a response to a

quit command from the user interface, returns to showing the original menu command.

The example described above and shown in Figure 11 illustrates how user messages according to the invention can be used for providing new services to a terminal, like a mobile phone, by having predetermined signs corresponding to predetermined commands. These signs and commands can be stored in a memory in the terminal device of a user (e.g. a mobile phone) or of a service provider (e.g. a computer) and can be implemented by software run by a processor for performing the predetermined commands. Also in this way the terminal can be programmed to function in a specific manner. The Menu application allows to introduce new applications into the terminal. For example the previously mentioned Phone Book application could be introduced to the terminal by a first user message from the service provider creating a first menu (e.g. menu 'Phone Book') after which when sending a request to the service provider the terminal would first receive a menu structure for sending the information needed to get the relevant phone number as was described earlier and after sending the relevant information the terminal would receive a response including the phone number. This procedure could be similar to what was described above in connection to Figure 10 for querying the timetable for a flight.

In the following, another application, which has not been pre-stored in a terminal, will be discussed by referring to Figures 7 - 9, and to Appendix 1. By means of the terminal, electronic mail can be sent through a mobile communications network. Correspondingly, by means of the terminal, a communications link can be established to the Internet through a mobile communications network. This communications link can be established by connecting a computer to a mobile station, by means of a data card, in which case a user interface of the computer can be utilised for reading pages and services on the Internet. Alternatively, a communications link to the Internet can be established by means of a communicator, which comprises in itself a user interface for reading pages and services on the Internet. A communicator of this type has been presented in Finnish patent application titled 960894 filed on 26.2.1996 with corresponding patent applications claiming priority from the above and filed at the EPO on 27.1.1997 with application number 97101184.6 and in the United States on 23.1.1997, the description of which is incorporated herein by reference thereto. Computer programs by means of which a communications link to different pages on the Internet can be established, and which enable the so-called surfing on the

Internet, are called WWW (World Wide Web) browsers. Currently, a number of different companies have their own service pages on the Internet, through which a user may order information on a service or make orders and reservations. This is accomplished by establishing communication to such a service page and by inputting information on what is required from the provider of services. This information can be either text or selection boxes/keys, by means of which selections are made according to the 'tick the appropriate box' principle. An example of such a service page has been given in Figure 7a, which illustrates a query page for bus schedules, which a user can download onto the display, e.g., through a telecommunications network, such as the Internet. In this case, the page will be stored in the communicator's memory (e.g., hidden memory) for the duration of the use of the page, and it can be stored in the permanent memory by means of an off-line command. On the page, selections can be made in boxes and additional requests and, for example, contact information for feedback, can be written in the space that may be available on the page. Alternatively, the communicator may automatically offer its own telephone number as the address for the feedback, as presented above in connection with the "Call Me Back" application. As is known, a page on the Internet can be presented in the HTML language (Hyper Text Markup Language. Transforming and presenting a service page from the Internet in the HTML language is known from WWW browsers.

Appendix 1 illustrates the Internet page in Figure 7 transformed into the HTML language in order to present the page in characters. The characters can be sent in a short message. In the GSM system, a message, whose maximum length is 160 characters, can be sent in a short message. Therefore, in the present invention, a whole page is not preferably transmitted, but only certain information of it. In the HTML code on this service page, both the information to be displayed on the display and the hidden information have been specified. Different types of data have pre-set codes. To send the page according to the present invention, information necessary for the sending of an application related information is added to the HTML code of the page, and this information is hidden from a user, i.e., it will not be included in the graphic presentation of the page. The information has preferably been arranged on the page by the provider of services. Thus, in order to be able to send such a service page as a short message, the provider of services should support the opportunity in question by including in the page in question specific information, at least the telephone number to which a message should be sent. At arrows A- J, illustrated in Appendix 1, there has been given information, which is added to the HTML code in order to send the information on

the page in a short message according to the present invention. For example, at the arrow A, a coding method can be indicated by means of a presented specification. The arrow B indicates that the type of the form is a query; the arrow C gives the name or abbreviation of the provider of services; the arrow D indicates the type of service in question; the arrow E gives the name of the service page; the arrow F indicates which form the terminal should use to display the answer; the arrow G gives the telephone number of the receiver, i.e., the provider of services; the arrow H gives the telephone number of a short message service centre through which the message is transmitted. The information indicated by the arrows G and H is essential, at the least. The arrows I and J indicate other specifications, which can be added on the HTML page as necessary. After the arrow J comes the actual HTML code that forms the WWW page in question.

Correspondingly, a terminal can be pre-set to find specific identifiers in the HTML code, which it picks up from the HTML code and attaches as characters to the data field INFO of the message to be sent (see figure 5). For example, a selected time is found on a line indicated by an arrow K as a variable *c/o*, after which the selected time is presented, which will be obtained as a response to a press of the SEND button. As illustrated in Figure 7, an uppermost selection box "1B1" has been marked, which is shown in the HTML code on a line indicated by an arrow L as a code checked. When a user presses the SEND button, a variable *opt1* will get the value of the selection box, which has been selected when pressing the icon, i.e., the value "1B1", assuming that the uppermost selection box has been selected.

In the example, illustrated in Figure 7 and Appendix 1, a terminal such as a communicator may, in this way, pick up information from the HTML code on lines indicated by the arrows C, D, G, H, K, and L. The terminal will place, at the beginning, an identifier indicating the application type, here as an identifier "WWW SMS". In addition, from the point indicated by the arrow C, a service provider identifier, on the basis of which the receiver will recognise the information in question, e.g., here a character C, can be placed in front. Furthermore, the service name can be placed correspondingly from the point of the arrow D, the telephone number of the sender from the point of the arrow G, the telephone number of the receiver from the point of the arrow D, and the selections made by the user from the points of the arrows K and L, which functions, so that the values of all the variables (here variables *c/o* and *opt1*) on the page are placed in the message. The values of the variables are preferably obtained as a response to a

send command, i.e., to a press of the SEND icon. In this case, the data sent in the short message are, e.g., as follows:

```

WWW SMS[cr]
5  CErSa[f]
   DTreBus[f]
   G+358505337397[f]
   H+358508771010[f]
   08:00 1B1

```

,in which the [cr] character indicates a line feed and the [f] character is a field separator, which indicates the ending of the field and, on the last line, all the selections made by the user are shown, i.e., that the user requests information on the timetable of the buses of the line 1B1 (Holvasti-Keskustori) departing after 08:00 o'clock. On the basis of this, the provider of services is able to send to the user information on the timetable of the bus line in question.

When this type of service page has been downloaded from the Internet, it can then be stored in the memory of the terminal, and later re-used without establishing a communications link to the Internet. Correspondingly, as to application related information pre-stored in the terminal, a specific identifier can be attached to the message, in connection with the sending of the information on the application illustrated in Figure 7 and Appendix 1, which indicates that the application is a service page downloaded from the Internet, e.g., the identifier 'WWW SMS' as in the example discussed above or 'WWW SMS45', in which the beginning indicates that it is a service page and the last two characters may indicate, e.g., the provider of services.

Sending information of a service page in a short message according to the present invention saves considerably the power consumption of the terminal and, thus, prolongs its useful life, which is an important objective in battery-operated devices. In addition, savings are made in phone call expenses, when query information can be sent together with the short message. The whole system has been illustrated in more detail in Figure 8. A terminal according to the present invention has been presented with reference numeral 1, by means of which a communications link (reference 101) to the Internet INT can be established. The invention could also be implemented by means of a device having means, according to the present invention, for processing information on an application

into a short message, which is sent through an ordinary mobile station by coupling the device to the mobile station. Such a device could be, e.g., a computer. To simplify matters, only a communicator will be discussed here as an example of a terminal according to the invention. When the communications link is established to the Internet by means of a communicator 1, a service page of a provider of services can be downloaded (reference 102) from the Internet into its memory and user interface. By means of solutions known for prior art, the user, after having filled in the page, has sent the service page by means of the communicator 1 to a server SERV of the provider of services, i.e., along route 101 - 101'. This means that the communications link to the Internet should be open for transmission. In a system according to the present invention, the information on the service page is sent (reference 103) in a short message to a short message service centre SM-SC, which sends it further (reference 104) to the server SERV of the provider of services. The transmission of the service page through the Internet, according to prior art, lasts considerably longer than the transmission of a short message and, thus, due to the present invention, a shorter transmission time is achieved, thereby, effecting a saving in power, since, in the communicator, transmission and reception, in particular, consume a lot of power compared to other functions. In addition, in the solution according to prior art, a circuit-coupled connection is in use in transmission, in which case the communicator is engaged during transmission. On the other hand, the sending of a short message does not engage the circuit-coupled connection, and an additional advantage is that the short message service centre SM-SC will send the message to a receiver later, if the telephone number of the provider of services happens to be unreachable during the transmission of the message.

When the user has in this way sent the provider of services a query, the provider of services will interpret it and respond to it. The provider of services may also send the response (reference 105 - 106) as a short message, and it can, in the same way as in the transmission of the service page, contain HTML codes, which the communicator will interpret and transform into a form legible to the user. Thus, the sending of a response has the same advantages as the sending of an query. For the response, the original service page downloaded from the Internet, can be arranged on the display by the application running HTML code pages, so that it has space (fields) ready for the response. When the user sends the query to the provider of services, he/she stores the page in the communicator. The response will have, in the same way as in transmission, specific identifiers, in which case, as the response arrives, the communicator will run the specific application and open,

on the display, the page in question and place the response in the area provided for it, whereupon the situation from the user's viewpoint looks as if he/she has received a WWW page containing the response. The response from the provider of services can also be, e.g., in a form of an application 'DTMF Service Commands' or in a corresponding form.

Instead of an application identifier being indicated as a code in a short message (in data field INFO), it can be indicated in an address field ADD of the short message, in which case it is given in bits. A certain byte in the address field of the transmission frame of the short message is a so-called TP-Data-Coding-Scheme, which has been specified in the GSM specification as GSM 03.40 and 03.38. The four less significant bits of the byte can be freely used, whereupon they can be used to indicate the type of the application to be sent according to the present invention. Different types of applications can be indicated by means of these four bits according to the example given in the following table, wherein bits are marked with references b3 - b0, in which b0 is the least significant bit (LSB) of the aforementioned byte:

	b <sub>3</sub>	b <sub>2</sub>	b <sub>1</sub>	b <sub>0</sub>	type
20	0	0	0	0	Business Card
	0	0	0	1	Call Me Back
	0	0	1	0	Meeting Proposal
	0	0	1	1	Meeting Proposal Answer
	0	1	0	0	Meeting Confirmation
25	0	1	0	1	Free-TimeQuery
	0	1	1	0	Position
	0	1	1	1	Trip request
	1	0	0	0	DTMF ServiceCommands
	1	0	0	1	Menu
30	1	0	1	0	WWWSMS01
	1	0	1	1	WWWSMS02
	1	1	0	0	WWWSMS03
	1	1	0	1	WWWSMS04
	1	1	1	0	Phone Book
35	1	1	1	1	Short Dial

Identifying the application in this way does not take the space reserved for the character length (max. 160 characters) of the message. When this type of

identification is used, it is also possible to receive the information on the application sent by means of an ordinary mobile station, but in this case, the user is unable to see, in connection with the message, that it is the information from a specific application, unless this information is programmed in the mobile station.

Neither can the information on this type of application be sent by means of an ordinary mobile station, because the user is unable to add this type of identifier to the message. Naturally an ordinary mobile phone does not support the different applications.

In the following, the implementation of a terminal, in this case a wireless terminal according to the present invention, and its operation in transmitting and receiving an application related information will be discussed in more detail by referring to Figure 9.

In Figure 9, there is a block diagram of the implementation of a terminal according to the present invention, which in the figure is shown as a device also having means for transmission over the air such as a mobile phone. However a similar implementation can be used for a terminal device of a service provider which usually does not have means for direct radio frequency transmission but is connected to such means (e.g. a base station) over the network as is shown in Figure 2 (e.g. the personal computer PC or server GTW). The terminal is preferably a mobile phone or communicator, which has circuits and a user interface that enable the processing of different applications. The terminal 1 in Figure 9 comprises, for communication using radio communication, a radio unit RU (the reference has not been marked in the figure), which comprises a transmitter branch 2, known from an ordinary mobile station, (comprising blocks implementing coding, interleaving, ciphering, modulating, and transmitting), a receiving branch 3 (comprising receiving, de-modulating, de-ciphering, de-interleaving, and implementing blocks) and, for transmission using radio communication, a duplex filter 4 that distinguishes between a received and transmitted message, as well as an antenna 5. The terminal has a main control circuit 6 that controls its operation. Furthermore, the main control circuit 6 comprises still a RU controller 7 that carries out control functions of an ordinary mobile station. In addition, the terminal main control circuit 6 comprises blocks 8 - 12 for carrying out the functions of a data processing unit of the terminal and for sending application related information as a short message according to the present invention. Thus, the blocks 8 - 12 can be said to form a data processing unit DU of the terminal. The controls of the radio unit RU and the terminal's data

processing unit DU do not have to be integrated into the main control circuit but, instead, they could also be implemented apart from each other, so that the RU control circuit 7 is on the radio unit's side, and on the data processing unit's side, there is the DU processor 8, which is in connection with the RU control circuit 7 for establishing communication between the radio unit and the data processing unit.

In the implementation illustrated in Figure 8, a first memory 13 is coupled to the main control circuit 6. The first memory can be a volatile memory, e.g., RAM, where the main control circuit stores in-use data. In addition, the terminal has a second memory 14, which is preferably a permanent memory 14, wherein the terminal's application programs performing different kinds of services and running the different types of applications, other data essential for the functioning of the terminal, and any other data which a user wants to store permanently, are stored. Alternatively, the application related information can be stored off-line in a memory of an external smart card, coupled to the terminal, wherefrom there is a connection to the main control circuit 6. This type of smart card is known, e.g., from the GSM mobile communications system, as a SIM card (Subscriber Identity Module), which usually has storage, e.g., for storing telephone numbers. In this case, new applications can be updated in the terminal by simply updating the memory of the smart card.

For viewing applications, the terminal has a display 15, and for inputting data, a keyboard or other input device 16, such as a touch display.

In the case where the data processing unit DU and the radio unit RU are implemented as functionally independent units, both of them should, however, have either common or separate memories 13, 14, and a user interface UI. Communication between the units would be established by means of a connection between the DU processor 8 and the RU control circuit 7 which, in this connection, is referred to as an external control interface ECI.

In the following, we will discuss the implementation and operation of the terminal, when transmitting application related information. By means of the user interface UI, the required application is brought onto the terminal's display, in which case, on the basis of 16 commands from input devices, the control circuit 7 retrieves from the memory 14, wherein applications 17, 18 programmably handling the application related information have been stored, the selected application stored therein onto the display 15 or retrieves a service from the telecommunications

network as presented above. The application relating to a service is processed in the DU processor 8, which also controls the transmission of application related information by maintaining contact with the RU control circuit 7, which controls the operation of the radio unit RU. An application contains information, as illustrated in Figure 6. The information can be in one or more fields, which have either been ready filled in (if a record of an application already containing information was retrieved from the memory) or its data fields are empty, in which case a user may input information in the fields by means of the input devices 16 or modify the information in the fields. When the application contains the required information and the user enters, by means of the input devices, a command to send the application related information, the DU processor 8 forms, from the information on the application, a line of characters, so that it places at the beginning of the line the application identifier (unless the identifier is given in the address field), and after that, e.g., the information contained in the different fields, separated by line feed characters, in alpha-numeric characters including the possible space between the characters. Hence, the DU processor 8 comprises, for the processing of the characters, word processing program-like functions, which have been implemented by programming and stored in the memory 14, wherefrom the DU processor 8 retrieves the program and performs the functions according to the program. The DU processor 8 transfers the line of characters formed to a SMS transmission controller 10, which adds to the message address information, i.e., the information on the destination either on the basis of the user input information or by retrieving it from another application, e.g., from the calendar application as presented above. Thus, this type of SMS transmission controller is a kind of bit and/or character generator. The calendar is preferably implemented as an application program, stored in the memory 14, which is used by means of the DU processor 8. Thus, communication between two different applications 17 and 18 is established by means of the DU processor, which thereby, e.g., on the basis of time information retrieved from one application, opens up or enters information in the other application (e.g. in the calendar at the time in question).

When address information has been added at a SMS transmission controller 10, the message is transferred into an inbox 11, which tries to send the message, and which has a buffer wherein the message is stored in case the transmission fails. If the transmission fails, the inbox 11 re-tries to send the message. When the DU controller 8 notices that the radio unit RU is ready to send the message, the message is transferred to a message transfer running circuit 12, which adds to the message information relating to the mobile communications system in question,

such as validity information (which indicates to which direction the message is going, i.e., from a mobile station to a message service centre or vice versa), processes the address information into a form required by the mobile communications system, and adds to the message the address of the message service centre, as well as the short message identifier (SAPI), and forms from the information to be transmitted, e.g., a digital signal for a transmitter 2, and sends the message to the radio transmitter branch 2 of the radio unit RU. In the case where the application identifier is placed in bits in the address field ADD, the running circuit 12 adds to the message the identifier in question. The transmitter branch 2 codes the signal according to the specifications of the mobile communications system, and forms, on the basis of the signal it receives from the running circuit 12, the frames to be transmitted, which the transmitter sends using radio communication to the short message service centre SM-SC, wherefrom they are sent further to the receiver (see Figure 1). In the transmitter branch 2, the message is processed according to the mobile communications system, e.g., coding, interleaving, ciphering, burst forming, modulating, and transmission.

In the following, we will discuss the implementation and operation of the terminal in receiving application related information. When the terminal receives a short message containing information for an application, the message first arrives at the radio unit RU. There, at a receiving branch 3, the processing of the message takes place according to the mobile communications system, such as reception, demodulating, de-ciphering, de-interleaving, and decoding. If the received frame identifier (SAPI) indicates that the message is a short message, it will be transferred into a destination box 9 of the data processing unit, which can be a memory for storing the message. If the received message is an ordinary short message, the DU processor 8 will report the short message received. If the message has an identifier, which indicates that it is an application related message, the DU processor 8 will launch the application 17, 18 in question, and place the information, from the received message, in the application in accordance with the markings on the received message. Hence, the reception of the user message (e.g. short message) will be displayed to a user as received application related information.

A terminal according to the present invention provides a simple way of transmitting and receiving application related information. Also the present invention provides a terminal that can have access to a enormous amount of service, e.g. by using the described Menu application. By especially using short messages as

communication from the reaching of the destination is guaranteed, and with the user messages in general an optimum current consumption is achieved. The use of an authorisation token in relation to a user message describes a new method of adding security to a user message.

5

This paper presents the implementation and embodiments of the invention with the help of examples. It is obvious to a person skilled in the art, that the invention is not restricted to details of the embodiments presented above, and that the invention can be implemented in another embodiment without deviating from the characteristics of the invention. Thus, the presented embodiments should be considered illustrative, but not restricting. Hence, the possibilities of implementing and using the invention are only restricted by the enclosed patent claims. Consequently, the various options of implementing the invention as determined by the claims, including the equivalent implementations, also belong to the scope of the present invention.

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SECRET

## CLAIMS

1. A terminal for a communication network, the terminal capable of supporting a plurality of applications and having means of communicating user messages, wherein it comprises means for receiving user messages having data and a header relating to one of said applications and means for addressing the data to a respective application according to said header.
2. A terminal according to claim 1, wherein said user messages are short messages and said data comprises characters in the short message.
3. A terminal according to claim 1, wherein it comprises a memory for storing data, and that one of said applications is a menu application, said menu application creating menu items in the terminal memory according to predetermined commands, the terminal having means for receiving commands relating to the menu application in said user messages.
4. A terminal according to claim 1, wherein said data includes an authorisation code and the terminal has means for allowing and prohibiting the addressing of the data to the respective application on basis of said authorisation code.
5. A terminal for a communication network, the terminal capable of supporting a plurality of applications and having means of communicating user messages, wherein it comprises means for sending data relating to one of said applications in a user message and means for adding a header to the user message, the header indicating the respective application that the data relates to.
6. A terminal according to claim 5, wherein said user message is a short message and that the terminal comprises means for processing the data into characters and for sending the data in a short message.
7. A system in a communication network comprising transmitting terminals and receiving terminals capable of supporting a plurality of applications, both of said terminals having means of communicating user messages, wherein the transmitting terminals comprise means for sending data relating to one of said applications in a user message and means for adding a header to the user message, the header indicating the respective application that the data relates to, and the receiving terminals comprise means for receiving user messages having

data and a header relating to one of said applications and means for addressing the data to a respective application according to said header.

09183349 103098  
B60E07 64E8160

## ABSTRACT

The present invention relates to a terminal (1) for a communication network, the terminal being capable of supporting a plurality of applications (17, 18) and having means of communicating user messages. The terminal comprises means for receiving user messages having data and a header relating to one of the applications (17, 18) and means (8) for addressing the data to a respective application according to the header. In an embodiment the user messages are short messages and the data comprises characters in the short message.

Figure 9.

```

<head><title>WWW SMS TRE NEXT BUS</title></head>
<html><body>
<form METHOD="SMS"
ACTION="None"
A→ ENCTYPE="b6"
>
<SMS_FORM_INFO
B→ FORM_TYPE="Req"
C→ PROVIDER="ErSa"
D→ SERVICE="TreBus"
E→ FORM_NAME="TBReq"
F→ RESPONSE_FORM="TBRes"
G→ TARGET_NUMBER="+358505337397"
H→ SERVICE_CENTER="+358508771010"
I→ FIELD_NAMES="N"
J→ PROTOCOL-ID="None"
>
<h2><p align=center>Tampere bus traffic SMS query</p></h2>
<h1><p align=center>Tampere</h1></p>
<table bgcolor=white width=95% cellpadding=2 border=2>
<tr><td align=center>Select the bus line, the time of departure from the
terminal for the next bus you want to know about, and then press
'SEND'</td></tr>
<tr><td align=center>Give the time, if you want to know the times of
departure of the lines departing after a specific time, otherwise, select
'Now'
K→ <SELECT NAME="clo">08:00
    <OPTION>Now
    <OPTION>05:00
    <OPTION>06:00
    <OPTION>07:00
    <OPTION>08:00
    <OPTION>09:00
    <OPTION>10:00
    <OPTION>11:00
    <OPTION>12:00
    <OPTION>13:00
    <OPTION>14:00
    <OPTION>15:00
    <OPTION>16:00
    <OPTION>17:00
    <OPTION>18:00
    <OPTION>19:00
    <OPTION>20:00
    <OPTION>21:00
    <OPTION>22:00
    <OPTION>23:00

```

<OPTION>24:00

<OPTION>01:00

</SELECT><P>

</td></tr>

L→

<tr><td><input type=radio checked name="opt1"

value="1B1"><b>Line 1 Holvasti - Keskustori</b></td></tr>

<tr><td><input type=radio name="opt1" value="1B2"><b>Line 1  
Härmälä - Keskustori<b></td></tr>

<tr><td><input type=radio name="opt1" value="1B3"><b>Line 1  
Keskustori - Holvasti<b></td></tr>

<tr><td><input type=radio name="opt1" value="1B4"><b>Line 1  
Keskustori - Härmälä<b></td></tr>

<tr><td><input type=radio name="opt1" value="2B1"><b>Line 2  
Keskustori - Rahola<b></td></tr>

<tr><td><input type=radio name="opt1" value="2B2"><b>Line 2  
Keskustori - Rauhaniemi<b></td></tr>

<tr><td><input type=radio name="opt1" value="2B3"><b>Line 2 Rahola -  
Keskustori <b></td></tr>

<tr><td><input type=radio name="opt1" value="2B4"><b>Line 2  
Rauhaniemi - Keskustori<b></td></tr>

<tr><td align=center><h2><input type=submit  
value="SEND"></td></tr></h2>

</table>

</form>

</body>

</html>

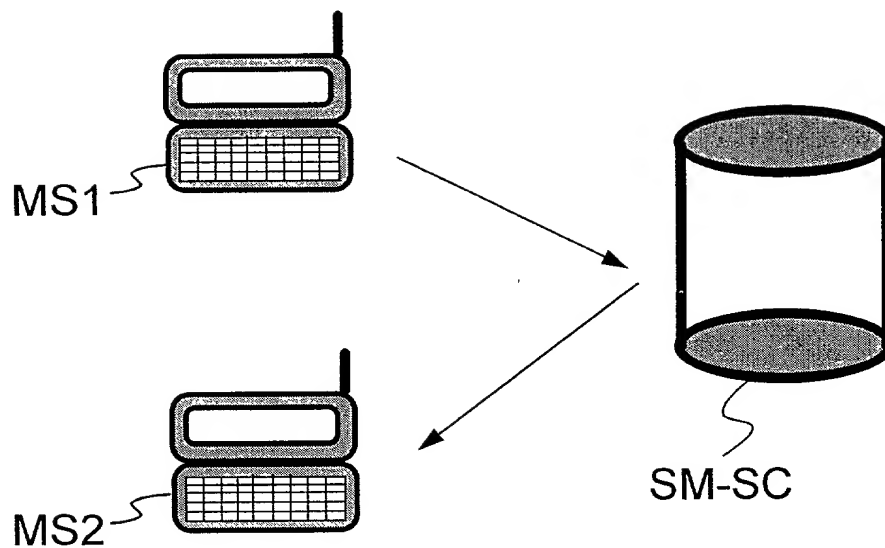


Figure 1

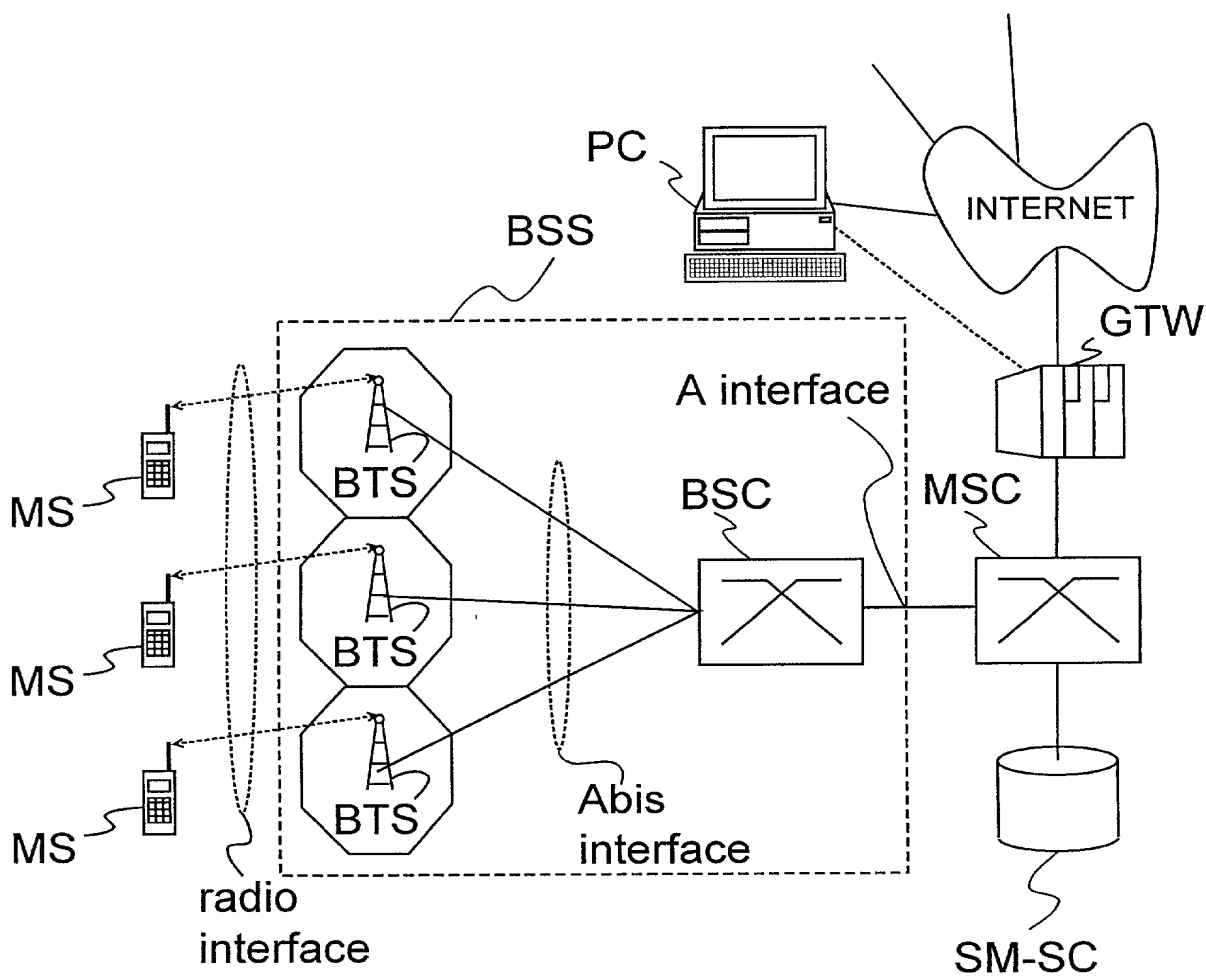


Figure 2

Figure 3

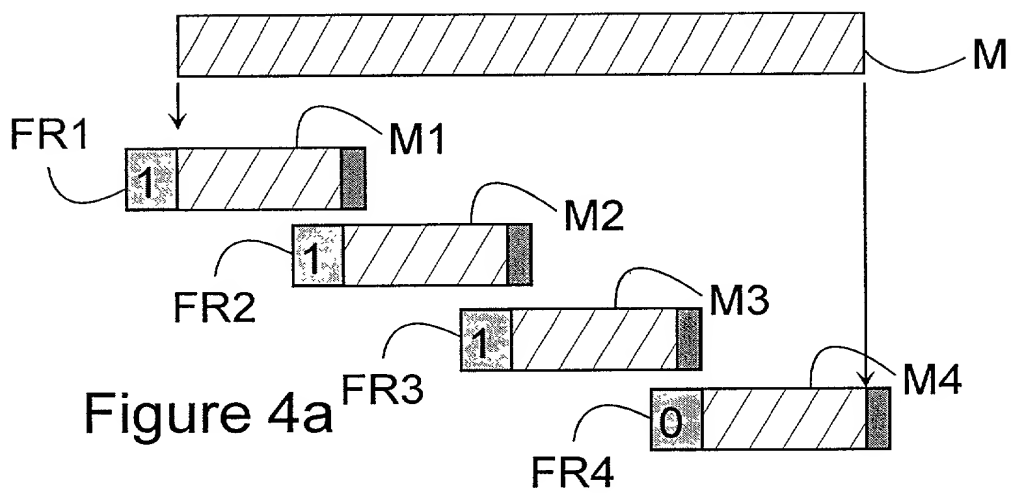
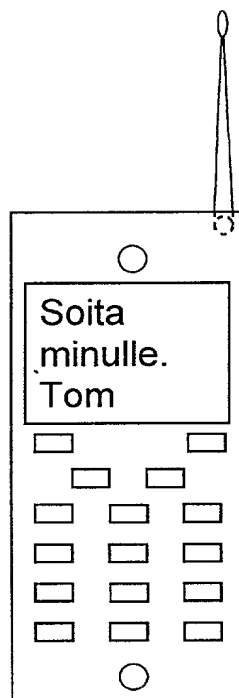


Figure 4a

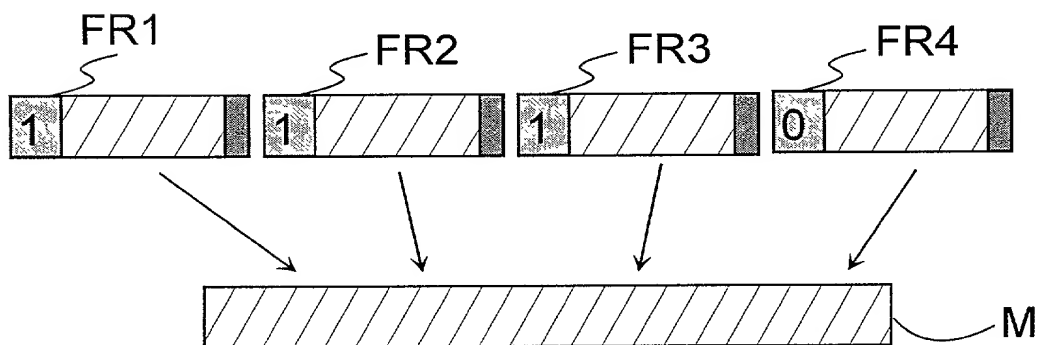


Figure 4b

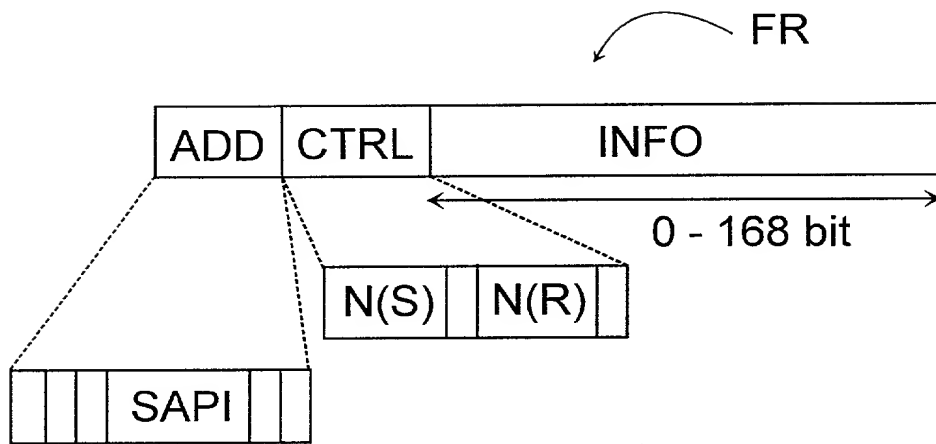


Figure 5

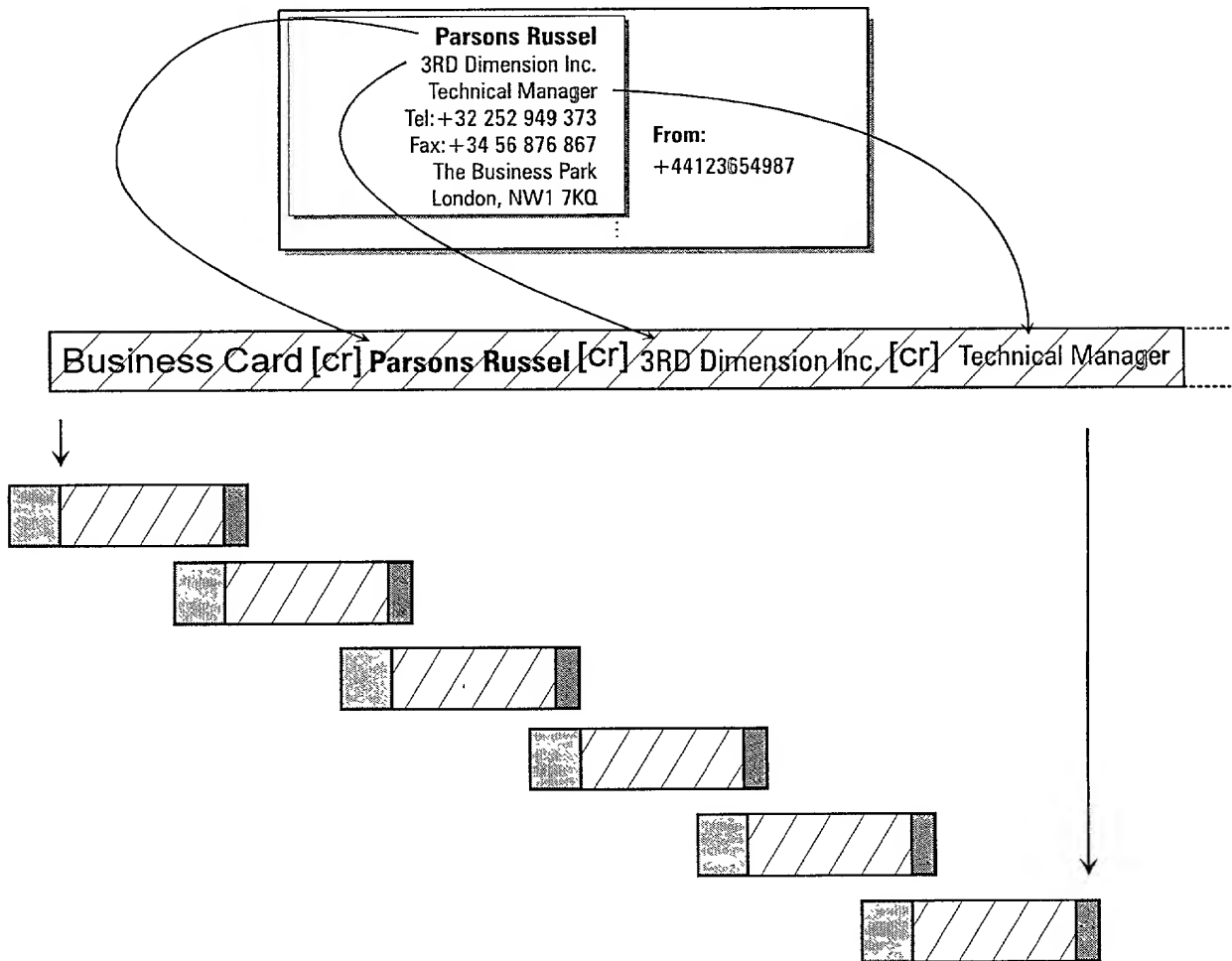


Figure 6

## Tampere bus traffic SMS query

### Tampere

Select the bus line, the time of departure from the terminal for the next bus you want to know about, and then press 'SEND'		
Give the time, if you want to know the times of departure of the lines departing after a specified time, otherwise select 'Now'		
<input checked="" type="radio"/> <b>Line 1 Holvasti - Keskustori</b>	08:00	▼
<input type="radio"/> <b>Line 1 Härmälä - Keskustori</b>	Now	▲
<input type="radio"/> <b>Line 1 Keskustori - Holvasti</b>	05:00	
<input type="radio"/> <b>Line 1 Keskustori - Härmälä</b>	06:00	
<input type="radio"/> <b>Line 2 Keskustori - Rahola</b>	07:00	
<input type="radio"/> <b>Line 2 Keskustori - Rauhaniemi</b>	08:00	
<input type="radio"/> <b>Line 2 Rahola - Keskustori</b>	09:00	
<input type="radio"/> <b>Line 2 Rauhaniemi - Keskustori</b>	10:00	
	11:00	
	12:00	
	13:00	
	14:00	
	15:00	
	16:00	
	17:00	
	18:00	
	19:00	
	20:00	
	21:00	
	22:00	
	23:00	▼

SEND

Fig. 7

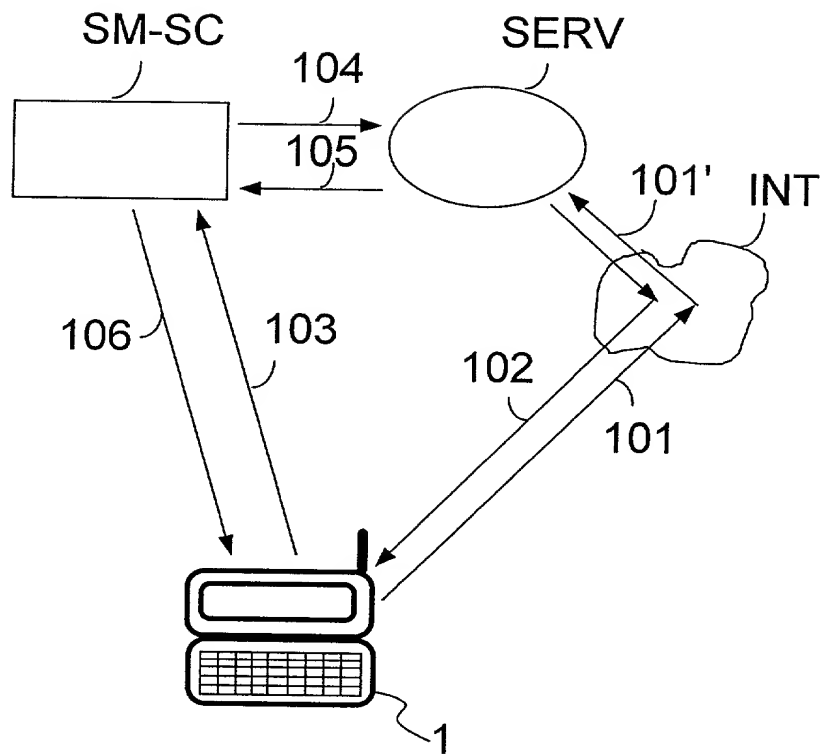


Figure 8

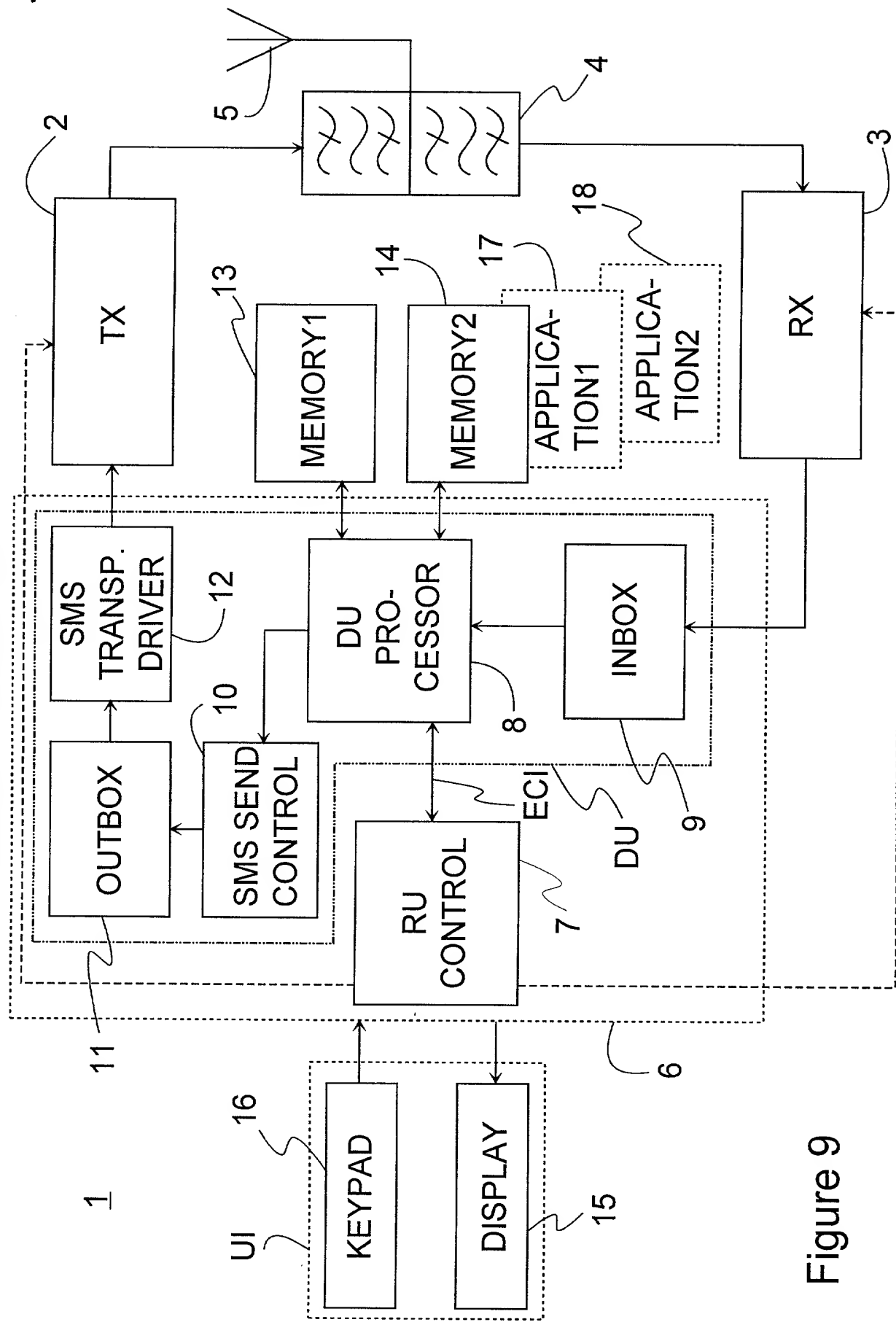


Figure 9

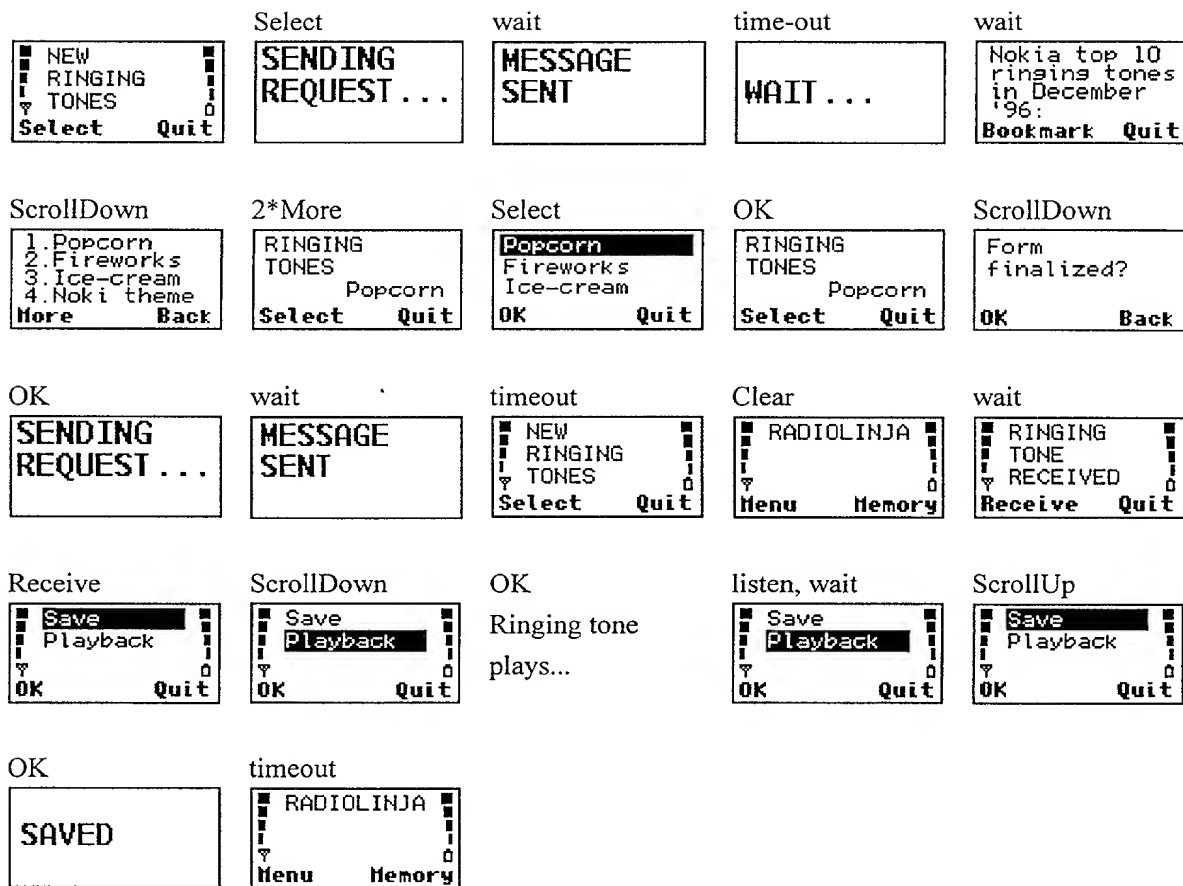


Figure 10



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**COMBINED DECLARATION AND POWER OF ATTORNEY**(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

---

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

(check one applicable item below)

- ☒ original.  
☐ design.  
☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

- ☐ divisional.  
☐ continuation.  
☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

---

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

---

COPY "E4E8F60"

COPY

## SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number, e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number, e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

## ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

### PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	960895	26 February 1996	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)  
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)  
UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

091834-103093

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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**NOTE:** If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete **ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION** for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)  
Mark F. Harrington (31,686)  
Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

---

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

---

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo Alanara  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address Hallituskatu 11 B 31, 90100 Oulu, Finland

Full name of second joint inventor, if any

Pekka Isomursu  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Jarvenkorvenkuja 284, 90550 Oulu, Finland

Post Office Address Jarvenkorvenkuja 284, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani Miettunen  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Oivantie 15, 90580 Oulu, Finland

Post Office Address Oivantie 15, 90580 Oulu, Finland

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

SECRET - ETEB 60

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

Mikko  Lietsalmi  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Suunnistajantie 2B, 90650 Oulu, Finland

Post Office Address Suunnistajantie 2B, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

Kalevi  Kaartinen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

Peter  Decker  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>seventh</sup> joint inventor, if any

<u>Arto</u>		<u>Lehtonen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland ,

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

<u>Pete</u>		<u>Pinko</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

<u>Teemu</u>		<u>Tarnanen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari  Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri  Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>thirteenth</sup> joint inventor, if any

Mikko

GIVEN NAME

MIDDLE INITIAL OR NAME

Terho

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland "

Residence Veisunkatu 58 A 1, 33820 Tampere, Finland

Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of <sup>Fourteenth</sup> joint inventor, if any

Patrik

GIVEN NAME

MIDDLE INITIAL OR NAME

Gustafsson

FAMILY (OR LAST NAME)

Inventor's signature Patrik Gustafsson

Date 20.06.2012 (20 June 2012) Country of Citizenship Finland

Residence Elsasgrand 5 E 61, 02230 Espoo, Finland

Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of joint inventor, if any

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_

Residence \_\_\_\_\_

Post Office Address \_\_\_\_\_

---

**COMBINED DECLARATION AND POWER OF ATTORNEY**

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

---

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

(check one applicable item below)

- ☒ original.  
☐ design.  
☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

- ☐ divisional.  
☐ continuation.  
☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

---

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

---

## SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number; e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

## ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

### PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

[illegible]

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)**  
(34 U.S.C. § 119(e))

PROVISIONAL APPLICATION NUMBER	FILING DATE
____ / _____	_____
____ / _____	_____
____ / _____	_____

☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

---

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---

NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)  
Mark F. Harrington (31,686)  
Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

---

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

---

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

09183343 103099

# SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo (GIVEN NAME) Alanara (FAMILY (OR LAST NAME))

Inventor's signature

Date 13th June, 1997 Country of Citizenship Finland

Residence Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address Hallituskatu 11 B 31, 90100 Oulu, Finland

Rantokatu 5 A23, 90100 Oulu, Finland 13th June, 1997

Full name of second joint inventor, if any

Pekka (GIVEN NAME) Isomursu (FAMILY (OR LAST NAME))

Inventor's signature

Date 13th June, 1997 Country of Citizenship Finland

Residence Jarvenkorvenkuja 284, 90550 Oulu, Finland

Post Office Address Jarvenkorvenkuja 284, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani (GIVEN NAME) Miettunen (FAMILY (OR LAST NAME))

Inventor's signature

Date 11th of June 1997 Country of Citizenship Finland

Residence Oivantie 15, 90580 Oulu, Finland ALPPUE 15 A 26

Post Office Address Oivantie 15, 90580 Oulu, Finland 90530 Oulu

11.6.1997 JH

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

<u>Mikko</u>	<u></u>	<u>Lietsalmi</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Suunnistajantie 2B, 90650 Oulu, Finland

Post Office Address Suunnistajantie 2B, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

<u>Kalevi</u>	<u></u>	<u>Kaartinen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

<u>Peter</u>	<u></u>	<u>Decker</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>seventh</sup> joint inventor, if any

<u>Arto</u>		<u>Lehtonen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland ,

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

<u>Pete</u>		<u>Pihko</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

Teemu	Tarnanen
GIVEN NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari  Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri  Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

" R "

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>thirteenth</sup> joint inventor, if any

<u>Mikko</u>		<u>Terho</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland ..

Residence Veisunkatu 58 A 1, 33820 Tampere, Finland

Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of <sup>Fourteenth</sup> joint inventor, if any

<u>Patrik</u>		<u>Gustafsson</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Elsasgrand 5 E 61, 02230 Espoo, Finland

Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of \_\_\_\_\_ joint inventor, if any

_____	_____	_____
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_

Residence \_\_\_\_\_

Post Office Address \_\_\_\_\_

360607-442078

---

**COMBINED DECLARATION AND POWER OF ATTORNEY**

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

---

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

(check one applicable item below)

- ☒ original.  
☐ design.  
☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

- ☐ divisional.  
☐ continuation.  
☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

---

## SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: *The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:*

*"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;*

*"(2) name of inventor(s), and attorney docket number which was on the specification as filed;*  
*or*

*"(3) name of inventor(s), and title which was on the specification as filed."*

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: *Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.*

NOTE: *The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:*

*"(1) name of inventor(s), and application number (consisting of the series code and the serial number; e.g., 08/123,456);*

*"(2) name of inventor(s), serial number and filing date;*

*"(3) name of inventor(s) and attorney docket number which was on the specification as filed;*

*"(4) name of inventor(s), title which was on the specification as filed and filing date;*

*"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or*

*"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."*

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

**ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

**PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))**

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	960895	26 February 1996	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)  
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)  
UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

860607 64868160

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)  
Mark F. Harrington (31,686)  
Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

---

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

---

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

09183343 "E4E8T50

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo \_\_\_\_\_ Alanara \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Full name of second joint inventor, if any

Pekka \_\_\_\_\_ Isomursu \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Jarvenkorvenkuja 284, 90550 Oulu, Finland

Post Office Address \_\_\_\_\_ Jarvenkorvenkuja 284, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani \_\_\_\_\_ Miettunen \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

Post Office Address \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

<u>Mikko</u>		<u>Lietsalmi</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Suunnistajantie 2B, 90650 Oulu, Finland

Post Office Address Suunnistajantie 2B, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

<u>Kalevi</u>		<u>Kaartinen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

<u>Peter</u>		<u>Decker</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>seventh</sup> joint inventor, if any

<u>Arto</u>	<u>Lehtonen</u>
GIVEN NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland ,

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)
Pete		Pihko

Inventor's signature Pete Fink

Date 11th June 1997 Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

<u>Teemu</u>	<u>Tarnanen</u>
GIVEN NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari  Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri  Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>thirteenth</sup> joint inventor, if any  
Mikko Terho  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship Finland ..  
Residence Veisunkatu 58 A 1, 33820 Tampere, Finland  
Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of <sup>Fourteenth</sup> joint inventor, if any  
Patrik Gustafsson  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship Finland  
Residence Elsasgrand 5 E 61, 02230 Espoo, Finland  
Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of joint inventor, if any  
\_\_\_\_\_  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_  
Residence \_\_\_\_\_  
Post Office Address \_\_\_\_\_

**COMBINED DECLARATION AND POWER OF ATTORNEY**  
(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

(check one applicable item below)

- ☒ original.
- ☐ design.
- ☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

- ☐ divisional.
- ☐ continuation.
- ☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

2025 OCT 10 10:34:50

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

*\*(2) name of inventor(s), and attorney docket number which was on the specification as filed;*  
or

*"(3) name of inventor(s), and title which was on the specification as filed."*

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

*NOTE: The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:*

*“(1) name of inventor(s), and application number (consisting of the series code and the serial number, e.g., 08/123,456);*

***“(2) name of inventor(s), serial number and filing date;***

***"(3) name of inventor(s) and attorney docket number which was on the specification as filed:***

*"(4) name of inventor(s), title which was on the specification as filed and filing date;*

*"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or*

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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---

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NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)

Mark F. Harrington (31,686)

Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

---

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

---

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo \_\_\_\_\_ Alanara \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Full name of second joint inventor, if any

Pekka \_\_\_\_\_ Isomursu \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Post Office Address \_\_\_\_\_ Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani \_\_\_\_\_ Miettunen \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

Post Office Address \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added

4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

Mikko  Lietsalmi  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Suunnistajantie 28, 90650 Oulu, Finland

Post Office Address Suunnistajantie 28, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

Kalevi  Kaartinen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

Peter  Decker  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>seventh</sup> joint inventor, if any

Arto		Lehtonen
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature 

Date 11 JUNE 1997 Country of Citizenship Finland

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

<u>Pete</u>		<u>Pihko</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

Teemu		Tarnanen
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari  Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri  Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>thirteenth</sup> joint inventor, if any  
Mikko Terho  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature *Mikko Terho*  
Date 16th JUNE 1997 Country of Citizenship Finland  
Residence Veisunkatu 58 A 1, 33820 Tampere, Finland  
Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of <sup>Fourteenth</sup> joint inventor, if any  
Patrik Gustafsson  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship Finland  
Residence Elsasgrand 5 E 61, 02230 Espoo, Finland  
Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of \_\_\_\_\_ joint inventor, if any  
\_\_\_\_\_  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_  
Residence \_\_\_\_\_  
Post Office Address \_\_\_\_\_

---

**COMBINED DECLARATION AND POWER OF ATTORNEY**  
(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

---

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

*(check one applicable item below)*

- ☒ original.
- ☐ design.
- ☐ supplemental.

*NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.*

- ☐ national stage of PCT.

*NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.*

- ☐ divisional.
- ☐ continuation.
- ☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

*WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.*

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

---

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

---

# SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number, e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number, e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

**ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

**PRIORITY CLAIM** (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

11

SECRET - 103343

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	960895	26 February 1996	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)**  
(34 U.S.C. § 119(e))

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

\_\_\_\_ / \_\_\_\_\_  
\_\_\_\_ / \_\_\_\_\_  
\_\_\_\_ / \_\_\_\_\_

FILING DATE

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)**  
**UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN PART (C-I-P) APPLICATION.

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete **ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION** for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)  
Mark F. Harrington (31,686)  
Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

0918344 103099

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo \_\_\_\_\_ Alanara \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Full name of second joint inventor, if any

Pekka \_\_\_\_\_ Isomursu \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Post Office Address \_\_\_\_\_ Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani \_\_\_\_\_ Miettunen \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

Post Office Address \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

Mikko  Lietsalmi  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Suunnistajantie 2B, 90650 Oulu, Finland

Post Office Address Suunnistajantie 2B, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

Kalevi  Kaartinen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

Peter  Decker  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>seventh</sup> joint inventor, if any

Arto \_\_\_\_\_ Lehtonen \_\_\_\_\_  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland ,

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

<u>Pete</u>		<u>Pihko</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

<u>Teemu</u>		<u>Tarnanen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature Tamara Tamamen

Date June 9, 1997 Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari  Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri  Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>thirteenth</sup> joint inventor, if any  
Mikko Terho  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship Finland  
Residence Veisunkatu 58 A 1, 33820 Tampere, Finland  
Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of <sup>Fourteenth</sup> joint inventor, if any  
Patrik Gustafsson  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship Finland  
Residence Elsasgrand 5 E 61, 02230 Espoo, Finland  
Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of \_\_\_\_\_ joint inventor, if any  
\_\_\_\_\_  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_  
Residence \_\_\_\_\_  
Post Office Address \_\_\_\_\_

---

**COMBINED DECLARATION AND POWER OF ATTORNEY**  
(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

---

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

(check one applicable item below)

- ☒ original.  
☐ design.  
☐ supplemental.

*NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.*

- ☐ national stage of PCT.

*NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.*

- ☐ divisional.  
☐ continuation.  
☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

*WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.*

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

---

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

---

## SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number; e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

**ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

**PRIORITY CLAIM** (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	960895	26 February 1996	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)  
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

\_\_\_\_ / \_\_\_\_

\_\_\_\_\_

\_\_\_\_ / \_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)  
UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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---

NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)  
Mark F. Harrington (31,686)  
Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

---

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

---

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

0913341039  
SECRET

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo

(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

Alanara

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Finland

Residence Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address Hallituskatu 11 B 31, 90100 Oulu, Finland

Full name of second joint inventor, if any

Pekka

(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

Isomursu

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Finland

Residence Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Post Office Address Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani

(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

Miettunen

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Finland

Residence Oivantie 15, 90580 Oulu, Finland

Post Office Address Oivantie 15, 90580 Oulu, Finland

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(If no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

<u>Mikko</u>		<u>Lietsalmi</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Suunnistajantie 2B, 90650 Oulu, Finland

Post Office Address Suunnistajantie 2B, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

<u>Kalevi</u>		<u>Kaartinen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

<u>Peter</u>		<u>Decker</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

Full name of <sup>seventh</sup> joint inventor, if any

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Parameter	1990-1991		1991-1992		1992-1993		1993-1994		1994-1995		1995-1996		1996-1997		1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2	
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ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature [Signature] 9TH JUNE 1997

Date 9TH JUNE 1997 Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari  Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri  Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>thirteenth</sup> joint inventor, if any  
Mikko  Terho  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship Finland ..  
Residence Veisunkatu 58 A 1, 33820 Tampere, Finland  
Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of <sup>Fourteenth</sup> joint inventor, if any  
Patrik  Gustafsson  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship Finland  
Residence Elsasgrand 5 E 61, 02230 Espoo, Finland  
Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of \_\_\_\_\_ joint inventor, if any  
\_\_\_\_\_  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)  
Inventor's signature \_\_\_\_\_  
Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_  
Residence \_\_\_\_\_  
Post Office Address \_\_\_\_\_

# COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL, CONTINUATION OR C-I-P)

As a below named inventor, I hereby declare that:

## TYPE OF DECLARATION

This declaration is of the following type:

(check one applicable item below)

- ☒ original.
- ☐ design.
- ☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

- ☐ divisional.
- ☐ continuation.
- ☐ continuation-in-part (C-I-P).

## INVENTORSHIP IDENTIFICATION

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

## TITLE OF INVENTION

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

RECEIVED 10303

## SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number; e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

**ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56.

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

**PRIORITY CLAIM** (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	960895	26 February 1996	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)**  
(34 U.S.C. § 119(e))

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)**  
**UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

091834-103098

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)

Mark F. Harrington (31,686)

Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

---

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

---

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

RECEIVED "ELECTRONIC" 10/29/99

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo

(GIVEN NAME)

Alanara

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Finland

Residence Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address Hallituskatu 11 B 31, 90100 Oulu, Finland

Full name of second joint inventor, if any

Pekka

(GIVEN NAME)

Isomursu

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Finland

Residence Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Post Office Address Jarvenkorvenkuja 2B4, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani

(GIVEN NAME)

Miettunen

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Finland

Residence Oivantie 15, 90580 Oulu, Finland

Post Office Address Oivantie 15, 90580 Oulu, Finland

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

Mikko

GIVEN NAME

MIDDLE INITIAL OR NAME

Lietsalmi

FAMILY (OR LAST NAME)

Inventor's signature [Signature]

Date 11th JUNE 1997

Country of Citizenship

Finland

Residence Suunnistajantie 2B, 90650 Oulu, Finland

Post Office Address Suunnistajantie 2B, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

Kalevi

GIVEN NAME

MIDDLE INITIAL OR NAME

Kaartinen

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

Peter

GIVEN NAME

MIDDLE INITIAL OR NAME

Decker

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

“ ”

ADDED PAGE TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>seventh.</sup> joint inventor, if any

<u>Arto</u>		<u>Lehtonen</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

<u>Pete</u>		<u>Pihko</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

Teemu	Tarnanen
GIVEN NAME	FAMILY (OR LAST NAME)

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari  Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri  Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>thirteenth</sup> joint inventor, if any

Mikko

GIVEN NAME

MIDDLE INITIAL OR NAME

Terho

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Veisunkatu 58 A 1, 33820 Tampere, Finland

Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of <sup>Fourteenth</sup> joint inventor, if any

Patrik

GIVEN NAME

MIDDLE INITIAL OR NAME

Gustafsson

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Elsasgrand 5 E 61, 02230 Espoo, Finland

Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of \_\_\_\_\_ joint inventor, if any

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_

Residence \_\_\_\_\_

Post Office Address \_\_\_\_\_

---

**COMBINED DECLARATION AND POWER OF ATTORNEY**

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

---

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

(check one applicable item below)

- ☒ original.  
☐ design.  
☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

- ☐ divisional.  
☐ continuation.  
☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

---

# SPECIFICATION IDENTIFICATION.

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number; e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

**ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56.

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

**PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))**

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	960895	26 February 1996	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)  
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)  
UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

090304 10099

NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

## POWER OF ATTORNEY

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

(list name and registration number)

Clarence A. Green (24,622)

Mark F. Harrington (31,686)

Harry F. Smith (32,493)

(check the following item, if applicable)

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

SEND CORRESPONDENCE TO

Clarence A. Green  
 Perman & Green, LLP  
 425 Post Road  
 Fairfield, CT 06430

DIRECT TELEPHONE CALLS TO:  
(Name and telephone number)

Clarence A. Green  
(203) 259-1800

## DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

Variable	Control		Treated		P
	n	%	n	%	
Age (years)					
< 60	10	100	10	100	1.0
60-69	10	100	10	100	1.0
70-79	10	100	10	100	1.0
≥ 80	10	100	10	100	1.0
Sex					
Male	10	100	10	100	1.0
Female	10	100	10	100	1.0
Marital status					
Married	10	100	10	100	1.0
Single	10	100	10	100	1.0
Widowed	10	100	10	100	1.0
Divorced	10	100	10	100	1.0
Education (years)					
< 12	10	100	10	100	1.0
12-15	10	100	10	100	1.0
16-18	10	100	10	100	1.0
≥ 19	10	100	10	100	1.0
Occupation					
Unemployed	10	100	10	100	1.0
Employed	10	100	10	100	1.0
Health status					
Good	10	100	10	100	1.0
Fair	10	100	10	100	1.0
Poor	10	100	10	100	1.0
Smoking status					
Smoker	10	100	10	100	1.0
Non-smoker	10	100	10	100	1.0
Alcohol consumption					
Drinker	10	100	10	100	1.0
Non-drinker	10	100	10	100	1.0
Comorbidities					
Hypertension	10	100	10	100	1.0
Diabetes	10	100	10	100	1.0
Cholesterol	10	100	10	100	1.0
Heart disease	10	100	10	100	1.0
Stroke	10	100	10	100	1.0
Arthritis	10	100	10	100	1.0
Depression	10	100	10	100	1.0
Medication					
Medication	10	100	10	100	1.0
No medication	10	100	10	100	1.0

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Seppo \_\_\_\_\_ Alanara \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Post Office Address \_\_\_\_\_ Hallituskatu 11 B 31, 90100 Oulu, Finland

Full name of second joint inventor, if any

Pekka \_\_\_\_\_ Isomursu \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Jarvenkorvenkuja 284, 90550 Oulu, Finland

Post Office Address \_\_\_\_\_ Jarvenkorvenkuja 284, 90550 Oulu, Finland

Full name of third joint inventor, if any

Juhani \_\_\_\_\_ Miettunen \_\_\_\_\_  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_ Finland

Residence \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

Post Office Address \_\_\_\_\_ Oivantie 15, 90580 Oulu, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

Mikko

GIVEN NAME

MIDDLE INITIAL OR NAME

Lietsalmi

FAMILY (OR LAST NAME)

Inventor's signature

Date Country of Citizenship Finland

Residence Suunnistajantie 2B, 90650 Oulu, Finland

Post Office Address Suunnistajantie 2B, 90650 Oulu, Finland

Full name of fifth joint inventor, if any

Kalevi

GIVEN NAME

MIDDLE INITIAL OR NAME

Kaartinen

FAMILY (OR LAST NAME)

Inventor's signature

Date June 25, 1997 Country of Citizenship Finland

Residence Hattnitter Str. 12, 40699 Erkrath, Germany

Post Office Address Hattnitter Str. 12, 40699 Erkrath, Germany

Full name of sixth joint inventor, if any

Peter

GIVEN NAME

MIDDLE INITIAL OR NAME

Decker

FAMILY (OR LAST NAME)

Inventor's signature

Date June 25, 1997 Country of Citizenship Germany

Residence Sibeliusstr. 33, 45772 Marl, Germany

Post Office Address Sibeliusstr. 33, 45772 Marl, Germany

(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

- ☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>seventh</sup> joint inventor, if any

Arto		Lehtonen
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland ,

Residence Silakatu 20, 33730 Tampere, Finland

Post Office Address Silakatu 20, 33730 Tampere, Finland

Full name of <sup>eighth</sup> joint inventor, if any

<u>Pete</u>		<u>Pihko</u>
GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence 26 Taft Avenue, Lexington, MA 02173 USA

Post Office Address 26 Taft Avenue, Lexington, MA 02173 USA

Full name of <sup>ninth</sup> joint inventor, if any

Teemu Tarnanen  
 GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

Post Office Address Kaskipuunkaari 5 C 6, 02340 Espoo, Finland

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of <sup>tenth</sup> joint inventor, if any

Hannu H. Kari  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Post Office Address Kullervonkuja 9 B 9, 02880 Veikkola, Finland

Full name of <sup>eleventh</sup> joint inventor, if any

Jari \_\_\_\_\_ Maenpaa  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Pispankatu 7 As 3, 33240 Tampere, Finland

Post Office Address Pispankatu 7 As 3, 33240 Tampere, Finland

Full name of <sup>twelfth</sup> joint inventor, if any

Petri \_\_\_\_\_ Nykanen  
GIVEN NAME MIDDLE INITIAL OR NAME FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship Finland

Residence Tahmelankatu 7 A 3, 33240 Tampere, Finland

Post Office Address Tahmelankatu 7 A 3, 33240 Tampere, Finland

Full name of <sup>thirteenth</sup> joint inventor, if any

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Date \_\_\_\_\_ Country of Citizenship Finland ..

Finland .

Residence Veisunkatu 58 A 1, 33820 Tampere, Finland

Post Office Address Veisunkatu 58 A 1, 33820 Tampere, Finland

Full name of Fourteenth joint inventor, if any

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Date \_\_\_\_\_ Country of Citizenship Finland

Finland

Residence Elsasgrand 5 E 61, 02230 Espoo, Finland

Post Office Address Elsasgrand 5 E 61, 02230 Espoo, Finland

Full name of joint inventor, if any

GIVEN NAME

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_

Residence

Post Office Address

**COMBINED DECLARATION AND POWER OF ATTORNEY**  
(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

*(check one applicable item below)*

- ☒ original.
- ☐ design.
- ☐ supplemental.

*NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.*

- ☐ national stage of PCT.

*NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.*

- ☐ divisional.
- ☐ continuation.
- ☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

*WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.*

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor *(if only one name is listed below)* or an original, first and joint inventor *(if plural names are listed below)* of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

A COMMUNICATION NETWORK TERMINAL SUPPORTING A PLURALITY OF APPLICATIONS

## SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b) or (c))

(a) ☐ is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☒ was filed on 02/20/97, as ☒ Serial No. 08 / 804,236  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number, e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number, e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60).

(c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_, filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

## ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

*(also check the following items, if desired)*

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

### PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

*(complete (d) or (e))*

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	960895	26 February 1996	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)**  
(34 U.S.C. § 119(e))

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)**  
**UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

0913343 "E4EET60"

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete **ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION** for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

*(list name and registration number)*

Clarence A. Green (24,622)  
Mark F. Harrington (31,686)  
Harry F. Smith (32,493)

*(check the following item, if applicable)*

- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

**SEND CORRESPONDENCE TO**

Clarence A. Green  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430

**DIRECT TELEPHONE CALLS TO:**  
*(Name and telephone number)*

Clarence A. Green  
(203) 259-1800

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(Declaration and Power of Attorney [1-1]—page 5 of 7)

360607-4433150

## SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

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(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

Alanara

FAMILY (OR LAST NAME)

Inventor's signature

Date \_\_\_\_\_ Country of Citizenship Finland

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(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

☒ Signature for fourth and subsequent joint inventors. Number of pages added  
4

. . .

☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added \_\_\_\_\_

. . .

☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added \_\_\_\_\_

. . .

☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

. . .

☐ Authorization of attorney(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

This declaration ends with this page.

ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

Full name of fourth joint inventor, if any

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ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
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ADDED PAGE TO COMBINED DECLARATION AND POWER OF  
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Full name of \_\_\_\_\_ joint inventor, if any  
\_\_\_\_\_  
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Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_  
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